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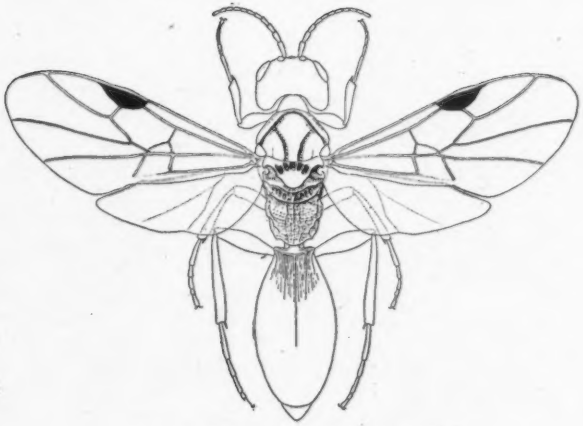

Vanhornia eucnemidarum Crawford.

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81a, 87a, 106*, 07*, 08, 09, 11, 13*, 15, 17*, 19a, 23a, 23b, 26, 31, 41, 44, 47, 48*, 51*, 54, 58, 61, 62, 63, 66*, 68*, 70*, 71, 75, 80*, 81, 82, 85*, 86*, 87*, 89*, 90, 96, 202, 03, 04, 09, 16*, 23, 29, 36, 38, 45, 46*, 47*, 49*, 50*, 52, 53, 56, 57, 60*, 63, 68, 70*, 72*, 76, 77*, 78, 79, 81, 82*, 91, 93*, 94*, 98, 99*, 301*, 03, 07a, 09*, 10*, 12, 23*, 28, 34*, 35, 36, 38*, 46, 50, 52a, 53, 54, 55*, 62, 63*, 68, 69, 76*, 77, 78*, 82*, 83*, 85*, 90, 93, 98, 99, 400*, 06, 09, 10*, 11, 18*, 19*, 22, 24, 25, 28, 29*, 30, 32, 36*, 37, 38*, 39, 42*, 43, 44*, 46, 47*, 51, 58, 60, 64, 69*, 74*, 77, 78, 79*, 80*, 88*, 89*, 90, 91, 93.

Offerata, rare species of North American Coleoptera. *Lack full set.

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ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXI. JULY, 1910. No. 7.

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Conocephalus fusco-striatus in North Georgia.

By H. A. ALLARD, Washington, D. C.

The careful observer of insect stridulations who visits the upper Piedmont region of Georgia in March or April, will hear, during warm evenings, a loud, continuous, noisy buzz sometimes in the tallest pines and oaks, or again in the weeds and low herbage of fields. This is the stridulation of a cone-headed grasshopper known as *Conocephalus fusco-striatus,* Redt.

In this region the notes of this interesting locust together with the familiar trillings of the ubiquitous field cricket, *Gryllus pennsylvanicus,* Burm., are among the earliest insect stridulations to be heard in spring. Here it is the only *Conocephalus* to be heard in early spring, and judging from the individuals in song during warm evenings, it is a fairly common species. At Thompson's Mills, Gwinnett County, where the writer has observed this cone-headed grasshopper for several years, the first singers of the season, appearing in March or April, are usually located in the crowns of pine trees throughout the settlement. Later in the season the young foliage of oaks and other deciduous trees afford them sufficient concealment, and with the appearance of green herbage in the fields and meadows, they become more terrestrial in their habits and

may be heard in the rank growths of oats, wheat and alfalfa in fields throughout the region.

Conocephalus fusco-striatus is strictly a nocturnal insect and stridulates most freely during warm, moonlight evenings. It is not musical during cold nights. Owing to its habit of appearing as soon as spring opens, this locust is frequently subjected to severe spells of weather approaching wintry conditions. Throughout Northern Georgia and other portions of the South there occurred in late April, 1910, phenomenal spells of cold weather, together with remarkable falls of sleet and snow. For a long period there were almost no signs of musical insect-life, but with the final appearance of warm nights following, *C. fusco-striatus* was again as noisy in the trees and shrubs as before.

The stridulation of this *Conocephalus* is a loud, harsh, snappy z-z-z-z-z-z continued for many minutes at a time. Within a few feet of the stridulating insect a strong, penetrating buzzing hum is noticeable, attended by almost continuous harsh, snappy, unmusical crepitations which are audible for long distances, and constitute the notes usually heard by the distant observer. It is somewhat difficult, especially for those who have not studied insect-stridulations, to locate one of these insects in a big field. Its powerful, penetrating notes seem to permeate the herbage on every hand, frequently causing no little bewilderment in the mind of one who attempts to locate the musician too carelessly.

C. fusco-striatus is a very shy insect and cannot readily be captured unless approached with considerable care. It takes to wing readily, and flies very freely long distances in the fields or from tree to tree. The writer's observations in the upper Piedmont region of Georgia seem to indicate that this is the only species of *Conocephalus* appearing much before midsummer. It is evident that *C. fusco-striatus* is characteristically an early spring species, for its season of stridulation is at its height in April and early May. Somewhat later in the season this *Conocephalus* becomes silent, and other species become musical with the passing of midsummer. It is probable that few of our common species of *Conocephalus* are as arboreal in their habits as *C. fusco-striatus*.

A List of Mosquitoes Collected in the Vicinity of Chicago, Ill.

By Wm. J. Gerhard, Chicago, Ill.

During the past few years some attention was given by the writer to the mosquitoes in the vicinity of Chicago, the acquisition of a representative series of the local species for the Field Museum's collection being the main reason for the interest taken in these insects. As only a limited amount of time could be devoted to collecting, it is of course quite evident that the following list is by no means a complete one, and that a number of additional species will eventually be found in this section of the state. But, since even the mere recording of the more common species, not before listed from the region, seems desirable, it is hoped that the accompanying records may be of some value, at least of sufficient interest to justify their publication.

In the vicinity of Chicago the mosquito problem is neither a serious nor a difficult one. Fortunately there is no apparent danger to be feared from the disease transmitting *Aedes calopus*, for this section of the state is far beyond the northern range of this species. While the presence of the carriers of malaria always suggests an element of danger, they are not so abundant that they should be considered a serious menace. There is, however, no justifiable excuse for permitting the Anopheles larvae to breed so commonly in many pools and ditches within the limits of the city.

But more abundant than the disease-transmitting species are those mosquitoes which attract attention on account of their annoying habits. Since the greater part of Chicago is located on low land, over which the waters of the lake formerly extended, suitable breeding places for these species are not wanting. Many pools and ditches, favorable for the development of the larvae, are found in the vicinity of the marsh areas and in the limited, low tracts of woodland that still remain in the outskirts of the city. Even in some of the built-up sections are found neglected drains, useless ditches and vacant lots with

disregarded pools of water, nearly all of them containing wigglers during a part of the summer, and all of them attesting the prevailing indifference that is still shown concerning the relation of these places to the supply of local mosquitoes. Notwithstanding the recent publicity given to the various phases of the mosquito problem, no apparent individual or united efforts have been made to control or eliminate the local breeding areas. But despite the lack of attention given to the matter, there is some consolation in the belief that many of the most prolific breeding places will eventually be removed by the city's rapid progress of improvements.

Beyond the region, over which the lake formerly extended, the land is higher, somewhat undulating, and more extensively covered with tracts of woodland. Corresponding to this change of environment, there is a difference in the species of mosquitoes, as is shown by the records of those taken at Glen Ellyn, Willow Springs, Lemont, Beverly Hills, and Palos Park, Ill., localities, which contain tracts of varied woodland and which, being within twenty-five miles of the city, are frequently visited by the local collectors.

In addition to the localities already mentioned and those within the limits of the city, collecting was also done at the following places: Beach, a region on the lake shore near Waukegan; Riverdale, a district just south of Chicago; and Hessville, Ind. The last locality is near the state line and within the region known as the "Chicago Area."

Anopheles punctipennis Say.

As the accompanying records may indicate, the above mosquito is by no means rare in this vicinity. Specimens were bred from larvae collected within the limits of the city as follows: In a roadside ditch, So. Chicago (July 22, 1906); drainage ditch, 88 St. and Stony Id. Ave. (Sept. 9, 1906); roadside and marsh ditches, Eighty-second Street and Cottage Grove Avenue (September 16 and 30, 1906; August 11, 1907); and in a lot pool at Sixty-third Street and Prairie Avenue (September 8, 1907). Adults were also reared from larvae taken

in spring-like water at Lemont, Ill. (July 1, 1906), and in a man-hole at Beverly Hills (August 18, 1907). Adults were either collected or observed at Beverly Hills (August 25, 1907; at light, September 7, 1907; August 27, 1908); Palos Park, Ill. (at light, September 5, 1908; September 4, 1909); and Hessville, Ind. (at light, July 4, 1908).

Anopheles quadrimaculatus Say.

This mosquito, to which, it is claimed, the name *maculipennis* should no longer be applied, is less common than the preceding species. On the south side of the city larvae were found at least at three places, namely, in a drainage ditch at Eighty-eighth Street and Stony Id. Avenue (September 9, 1906), roadside ditch at Sixty-second Street and Cottage Grove Avenue (September 30, 1906); and in a lot pool at Sixty-third street and Prairie Avenue (September 9, 1907). Adults were collected in Chicago (at light, September 8, 1909), and at Willow Springs (July 14, 1908).

Anopheles walkeri Theob.

The specimens determined as the above species closely resemble *quadrimaculatus,* but differ mainly in having all of the joints of the palpi distinctly tipped with white.

Aggressive females were collected in the meadows near Beach, Ill., late in the afternoon of August 23, 1908. They were also taken at Palos Park, Ill. (at light, July 4, 1909), and at Hessville, Ind. (September 22, 1907; at light, July 4, 1908).

Psorophora ciliata Fabr.

No larvae of this conspicuous mosquito were obtained either in the city or in the nearby region. The adults were likewise quite rare: Chicago (August 16, 1903); Beverly Hills (August 14, 1903), and Hessville, Ind. (August 30, 1907). In the southern part of the State (Olive Branch) this species apparently is much more abundant, blood-thirsty females having been seen there as late as October 9.

Mansonia perturbans Walk.

On the south side of the city this species was rarely observed (at light, June 5 and 9, 1906, June 19, 1908), but in the tracts of woodland in the following localities it was both common and annoying: Palos Park (at light, June 20, July 20, 1908); Beverly Hills (at light, June 27, 1908); Glen Ellyn (August 2, 1908), and Hessville, Ind. (at light, July 4 and August 29, 1908).

Aedes bimaculatus Coq.

Only one specimen, a female, of this easily recognized, Southern species can be recorded. It was collected by Mr. Alex. Kwiat, at light, at Hessville, Ind., on July 4, 1908.

Aedes canadensis Theob.

Although this mosquito no doubt breeds in most of the tracts of woodland near Chicago, adults were collected only at Glen Ellyn, on May 30, 1908.

Aedes curriei Coq.

This mosquito was not often observed within the limits of the city (at light, August 26, 1906, June 16, 1907; at light, June 1, 1909), but in the open fields near Riverdale, just south of Chicago, on two occasions (September 4, 1907; May 17, 1908), it was both abundant and aggressive.

Even in a series of adults of this species taken at the same place and on the same day there is found a considerable variation in the color of the thorax. On some specimens the median and the lateral brown stripes are barely discernible; on others they are broad and prominent. The color of the upper surface of the abdomen is likewise variable. On one or two specimens the abdomen is covered entirely with silvery white scales, with barely a trace of black on each side of the four basal segments, while on others the black scales are present on the side of all the segments excepting the last one.

Aedes fitchii F. and Y.

The larvae of this species were collected in a ditch at the side of the railroad at Palos, Ill., on May 10, 1908. Some

adults, apparently referable to the above species, were taken near the same place (May 30, and July 4, 1909), and at Hessville, Ind. (July 12, 1908).

Aedes fuscus O. S.

Females of the above mosquito were taken in woodland at Glen Ellyn, Ill., on May 30, 1908.

Aedes lutzii Theob.

Several aggressive females were collected in woodland at Willow Springs, Ill. (June 14, and July 14, 1908), and at Hessville, Ind. (July 12, 1908).

Aedes pretans Grossb.

One female taken at Glen Ellyn, Ill. (May 30, 1908), and two at Willow Springs, Ill. (June 14, 1908), are the only specimens that can be recorded for this region.

Aedes subcantans Felt.

As there appear to be no available characters, excepting those found on the larvae, whereby this species may be readily separated from several closely allied forms, no records are given of those adults which were taken in the vicinity of Chicago, although they apparently represent the above mosquito.

The larvae were collected at two, not widely separated places on the south side of the city during the fore part of three consecutive years. They were found in stagnant water in woodland ditches, which were dry during the greater part of the summer, near Eighty-second Street and Stony Id. Avenue (April 29, 1906; April 28, 1907; April 19, 1908), and in a roadside ditch in a semi-woodland tract near Seventy-ninth Street and East Avenue (May 6, 1906; April 28, 1907; April 19, 1908).

Aedes sylvestris Theob.

This is the most common mosquito found in the vicinity of Chicago, and, inasmuch as it flies several miles from its breeding place, thus entering the built-up sections of the city for a considerable distance, it likewise ranks as the most an-

noying species. Not only during the latter part of the summer does it become troublesome around the houses and the parks, but even as early as the month of June (1908), it has been found in the city in large numbers.

So frequently have the larvae been collected in roadside ditches, in marsh pools, and in other situations within the limits of the city, and so commonly have the adults been observed in this region, that a page of local records could be given, were it necessary. As the habits of this mosquito are well known, it will suffice to say that the earliest record for the adults is May 16; the latest, October 6.

Aedes sylvicola Gross.

One male was bred from some larvae which were collected in a ditch in a semi-woodland tract near Seventy-ninth Street and East Avenue, on April 28, 1907. This specimen and another taken at Palos Park, on May 30, 1907, are the only representatives of this species that can be recorded.

Aedes taeniorhynchus Wied.

One specimen, a female, was collected May 18, 1906, on the south side of the city, by Mr. Charles A. Hill. This is the only mosquito with a white-banded beak that was taken in this region.

Aedes triseriatus Say.

Specimens of this aggressive but rather rare woodland mosquito were collected at Beverly Hills (August 18 and 25, September 1, 1907), and near Bowmanville, a suburb in the northern part of Chicago (October 6, 1907).

Aedes trivittatus Coq.

Not observed within the limits of the city, but in the tracts of woodland near the following places the adults were sometimes rather common and always ready to bite, occasionally being quite persistent in their attacks: Beverly Hills (August 18 and 25, 1907; July 13, 1908); Willow Springs (July 14, 1908); Palos Park (July 15, 1908; at light, September 4, 1909); Glen Ellyn (August 2, 1908), and Hessville, Ind. (July 12, 1908; August 29, 1909).

Culiseta consobrinus Desv.

All but one of the specimens obtained were bred from larvae collected on the south side of the city. The wigglers were found in a woodland ditch with stagnant water near Eighty-second Street and Stony Id. Avenue (April 28, 1907), in a roadside ditch near Seventy-ninth Street and East Avenue (June 2, 1907), in a pool of foul water at Sixty-third Street and Cottage Grove Avenue (September 8, 1907), and in a ditch, with apparently fresh water, at West Pullman (May 17, 1908).

Culex restuans Theob.

Adults of this species were bred from larvae collected in fresh water at Willow Springs (June 24, 1906), and at Lemont (July 1, 1906). The immature stages, as well as a few adults, were also taken in Chicago. The records for this mosquito, however, are so few in number that there is a good reason for believing that it was generally mistaken for the common *C. pipiens,* especially since it appears to be fairly abundant in other sections of the country.

Culex territans Walk.

The only specimens obtained are those which were bred from larvae collected in various parts of the south side of the city. The larvae were found in a ditch at the edge of a marsh along South Chicago Avenue (August 5, 1906); in a marsh hole near Eighty-eighth Street and Stony Id. Avenue (September 9, 1906); in a drainage ditch near Eighty-second Street and Cottage Grove Avenue (September 16, 1907), and in lot pools at Sixty-third Street and Prairie Avenue (September 8, 1907), and Fortieth and Wallace Streets (September 15, 1907).

Culex pipiens Linn.

As might be expected both the larvae and the adults of this widely distributed species were found quite commonly in various parts of the city, as well as in the surrounding region. Many local records could be given for this mosquito, but they would add nothing new to what is already known

concerning its habits. That this species will breed throughout the year, if the conditions are favorable, seems evident from the fact that the larvae were found in tubs of water in hothouses, on March 14, 1908. The latest outdoor record for the wigglers is November 3.

Bancroftia signifer Coq.

A rather rare, apparently harmless, woodland species, which was always found resting on the bark of trees, and which was observed only at two places: Beverly Hills (August 18, September 1, 1907; July 13, 1908), and Glen Ellyn (August 2, 1908).

Uranotaenia sapphirina O. S.

This prettily marked, little mosquito breeds quite commonly in the outskirts of the city, but at no time has it been observed trying to bite. Larvae were collected in a roadside ditch near the edge of a marsh along South Chicago Avenue (August 5, and September 9, 1906; August 4, 1907); in ditches along Cottage Grove Avenue, near Eightieth Street (September 16, 1906; August 11, 1907), and in lot pools at Sixty-third Street and Prairie Avenue (September 8, 1907).. Adults were taken in woodland at Beverly Hills (August 25, 1907; at light, September 7, 1907; August 27, 1908), and at Hessville, Ind. (at light, August 29, 1908).

Sayomyia albipes John.

The interesting larvae of this species were found in a series of ditches in a lot at Sixty-third Street and Prairie Avenue, on September 8, November 3 and 28, 1907. Dredging was possible on the last mentioned date, only after a thin coating of ice had been broken. At the same place, on March 24 and April 12, 1908, some more larvae were collected. The immature stages were also found in a railroad ditch near Palos Park, on May 10, 1908.

Issac B. Ericson, Molndal, Sweden, is working up the Micro Coleoptera of the World and desires to exchange specimens. G. A. Akerlind, 664 Monadnock Block, Chicago, Ill., will act as intermediary if desired.

On some Acridioidea from Puerto Bertoni, Paraguay.

By Lawrence Bruner, University of Nebraska.

The following named locusts were submitted to the writer recently for determination. They were taken by Arnold de Winkelried Bertoni, of Puerto Bertoni, Paraguay. Although the collection is a comparatively small one, it is nevertheless of more than usual interest since it contains at least three apparently new species. In it are also represented two or three other forms of more than ordinary interest.

Orphula pagana Stal.

This species is represented by both sexes (♂, No. 710 and ♀, No. 717). They are of the normal size and color.

Orphula gracilicornis n. sp.

A moderately robust, medium sized, variably colored insect with long, slender and but little flattened antennae and in which the wings are more or less smoky with all the veins bright ochraceous.

Head large, a trifle wider than the front edge of the pronotum, shorter than the latter, the occiput and vertex ascendent, the latter in front of the eyes about as wide as long (♀) or a little longer than wide (♂), more or less acuminate in front, the lateral walls sharp and bordered internally by a deep groove. Eyes fairly prominent, more or less acuminate above, with their anterior edge almost straight, about as long as that portion of the cheek below them, separated above by a space fully twice as great as the width of the frontal costa between the antennae. The latter 18 or 19 jointed, rather elongate, in the female about equalling the combined length of the head and the pronotum, in the male almost a half longer or nearly as long as the hind femora, the joints of the basal half flattened, of the outer half cylindrical, in nowise ensiform as in the typical species of the genus. Frontal costa prominent, a little expanding from the ocellus downward and a very little contracting just above, quite deeply sulcate throughout in the ♀, but in the ♂ sometimes nearly plane between the antennae. Pronotum a very little expanding posteriorly, the lateral carinae fully as prominent as the median and parallel to the last transverse sulci, beyond this point more widely separated, a little less prominent and plainly divergent to the hind margin; hind edge of disk obtusangulate, the surface of the hind lobe both on the disk and

sides rather finely granulose and more or less punctulate, the anterior lobe comparatively smooth. Tegmina and wings about equalling (♀) or a little surpassing (♂) the apex of the abdomen; the former coreaceous and irregularly and closely veined on basal half, the apical portion somewhat membranous and more evenly and sparsely veined, their apex obliquely truncate; the latter moderately narrow, in the males provided with a prominent vitreous fenestrate area crossed by about 10 nearly parallel nervures. Hind femora about normal, in the male extending beyond the tip of the abdomen by the length of the geniculae, in the female just about or not quite reaching the apex of the abdomen. Hind tibiae with 11-12 spines on both the outer and inner edges. Lobes of the mesosternum separated by a space very slightly transverse, their inner edges rounded and gently divergent posteriorly.

Color above varying from plain grass-green on vertex, top of head, disk of pronotum and dorsal portion of tegmina to dark brown with still darker fleckings on the latter; sides of head, pronotum, pleura and discal and costal fields of tegmina varying from castaneous to dark brown; face and legs together with abdomen and venter varying from dull ochreous to dirty testaceous or even pale brown, on the hind femora the upper carinæ marked with fuscous or black, the knees dusky, the hind tibiæ strongly infuscated with pale black-tipped spines. Antennæ testaceous basally, infuscated apically. Upper edge of sides of pronotum lined with deep black, the line crossing over to the outer edges of disk on the hind lobe.

Length of body, ♂, 17 mm., ♀, 24 mm. of pronotum, ♂, 3.4 mm., ♀, 5 mm.; of tegmina, ♂, 14 mm.; ♀, 17 mm.; of hind femora, ♂, 11 mm., ♀, 14.5 mm.

Habitat.—Two males (No. 709) and three females (Nos. 718, 707), Puerto Bertoni, Paraguay, where they were taken during the month of January. A. de Winkelried Bertoni collector.

Orphulella punctata De Geer.

This very widely distributed and variable tropical American locust is represented by several specimens embracing both sexes (Nos. 708, 711, 713 and 727).

Ommexecha virens Serville.

The collection contains a single female specimen of a species of *Ommexecha* that I have no hesitancy in referring to Serville's *virens*. It is very similar in form to the next spe-

cies, but has narrower and more pointed tegmina, and in addition appears less rugose of pronotum. It bore no number.

Ommexecha servillei Blanchard.

This insect is represented by both sexes which are numbered 394. They are typical.

Amblytropidia robusta Bruner.

A single female specimen of this species is at hand. It is of a uniformly dark color and bears the number 728.

Elaeochlora viridicata (Serville).

A single male specimen bearing the number 399 is referred here.

Diponthus crassus n. sp.

A comparatively small, but very robust species without banded hind femora in which the base and disk of the wings are flavous or hyaline instead of red or roseate.

Head short and deeply set into the anterior edge of the pronotum, about as wide as high; the vertex broad, nearly as wide as the shortest diameter of one of the eyes, the fastigium depressed, widely and shallowly sulcate, the surface sparsely punctate; frontal costa gradually merged into the vertex and at its upper extremity nearly as wide, gradually narrowing below, deeply sulcate at ocellus and below, nearly plane above but provided with a few scattered punctures. Antennæ with the segments flattened or compressed nearly or quite one-half longer than the combined length of the head and pronotum 22-jointed. Pronotum expanding but little posteriorly, the anterior lobe coarsely and the hind one densely and deeply punctulate, the two lobes about equal in length, the transverse sulci, especially the hind ones, profound; anterior edge roundly emarginate at middle, the hind margin of disk widely and roundly angulate. Tegmina and wings somewhat abbreviated, not quite reaching the apex of the abdomen or the tips of the hind femora, the veins and veinlets testaceous and the background dull black. Hind femora rather slender their lower sulcus inner side and outer disk together with the genicular lunules black or piceous. Hind tibiæ 9-11 spined externally and 14 spined internally, the lower and inner faces infuscated, externally and above dark vinaceous. Prosternal spine large compressed, straight, the apex rounded. Interspace between the mesosternal lobes wider than the lobes themselves.

General color dull brunneo-piceous, the frontal costa, vertex, a line on occiput and middle of pronotum to its apex testaceous; pos-

terior and anterior edges of lateral lobes of latter likewise testaceous as are also the anterior and middle legs and portion of the hind femora.

Length of body, ♀, 34 mm., of pronotum, 8 mm., of tegmina, 22 mm., of hind femora, 19 mm., of antennæ 16.5 mm.

Habitat.—The type comes from Puerto Bertoni, Paraguay, where it was taken in November, 1909, by A. de Winkelried Bertoni. It was submitted under the number 400.

This form may be separated from the previously described species by the subjoined table.

TABLE FOR DETERMINING THE SPECIES OF DIPONTHUS.

A. Tubercle of the prosternum acuminate, retroarcuate.
  b. General color green or olive; tegmina immaculate, the margins pale.
    c. Grass-green; wings greenish-hyaline. Posterior femora on outer face not dotted with black.....**electus** Serv.
    cc. Olive green; tegmina dilute fuscous; wings subhyaline, rose-color basally, the nervures brown. Posterior femora on the outer face with two bands and the condyle black or blackish; hind tibiæ with base, apex and spines black .....**dispar** Gerst.
  bb. General color ochraceous or fuscous; tegmina maculate.
    c. Wings blue, the apex bordered with brown; hind tibiæ black and yellow annulate, not black-dotted. **festivus** Gerst.
    cc. Wings rose color, tesselate with black; hind tibiæ yellow, dotted with black apex and base dusky.
      clarazianus Pict. et Sauss.

AA. Tubercle of the prosternum straight, not retroarcuate.
  b. Pronotum with the pale lines percurrent, three dorsal, straight; two lateral, suboblique. Body and legs yellow, black and red; tegmina black tesselate with yellow
    puelchus Pict. et Sauss.
  bb. Pronotum with the pale lines not percurrent, except the dorsal one alone in some instances.
    c. Larger (male, 40, female 51 mm.) Testaceous conspersed with black .....**nigro-conspersus** Stal.
    cc. Smaller (male, 24-29, female, 30-40 mm.) Color variable.
      d. General form very robust, the tegmina and wings not quite reaching the tip of abdomen or apex of hind femora. Wings hyaline or flavous, without a tinge of red or roseate. Hind femora not banded or fasciate
        crassus N. Sp.

dd. General form only moderately robust, the tegmina and wings reaching or surpassing the tip of the abdomen or apex of hind femora. Wings with a varying portion more or less red or roseate. The hind femora fasciate.

e. Body and legs not black spotted.

f. Tegmina for the most part olivaceous or greenish, but slightly maculate with dusky ..... **permistus** Serv.

ff. Tegmina decidedly obscure maculate.

g. Anterior and middle legs not largely black; general color dull testaceous, inclining to brown **paraguayensis** Brunner.

gg. Anterior and middle legs largely black.

h. Pronotum for the most part black, the bands bright yellow, head and knees ornamented with red. **schulzi** Brunner.

hh. Pronotum when black only so on the anterior lobe, the bands testaceous. Head and knees without red. **argentinus** Pict. et Sauss.

ee. Body and legs conspicuously conspersed with black.

f. Body and legs strongly tinged with rufous or red. Antennæ unicolorous, black **pycnostictus** Pict. et Sauss.

ff. Body and legs along with tegmina greenish or olivaceous. Antennæ annulate with pale. .... **communis** Bruner.

Leptysma filiformis Serville.

A single male locust bearing the number 403 is referred here with some doubt, but by referring to the table for separating certain South American species of the genus (Proc. U. S. Nat. Mus., xxx, p. 658), it will be found that the specimen at hand falls in with what has been accepted as the above species.

Adimantus ornatissimus Burmeister.

A very beautifully marked female locust numbered 409 is placed as Burmeister's *Oxya ornatissimus*. It agrees well with other specimens in the writer's collection that have been called the *Acridium vitticeps* Blanchard. (See Paraguayan Locusts, Proc. U. S. Nat. Mus., xxx, p. 666).

Schistocerca paranensis (Burmeister).

A female specimen of this destructive migratory species is included without a number and indicates that Puerto Bertoni is within its range.

Schistocerca flavofasciata (De Geer).

A male specimen of this genus bearing the number 729 is referred here. It is quite normal.

Dichroplus punctulatus (Thunberg).

This insect, the most widely distributed species of the genus *Dichroplus*, is represented by a typical female specimen under the number 714.

Dichroplus bergi Stal.

There are two specimens, a pair, of a locust belonging to the genus *Dichroplus* at hand, that are referred to Stal's *D. bergi* with some doubt. They come nearest to his variety b. but are not quite typical. They are numbered ♀ 723, ♂ 726, the former collected in January, the latter during December.

Parascopas sanguineus n. sp.

Very similar to *Parascopas* (*Scopas*) *obesus* Giglio-Tos in size and general appearance, but differing from that insect in being somewhat slender and in lacking the blood-red lower sulcus and inner face of hind femora. The present species also differs from *obesus and chapadensis* Rehn, in having the entire lower surface including the meso- and metasternum together with the last ventral segment of the male abdomen rich blood-red. The hind tibiæ are also much deeper blue-green than in the other two known species. The cerci of the present species are similar to those of *obesus* but less abruptly bent upwards than there. The supra-anal plate is largely pallid not at all sulcate at middle, while the preceding segment has its marginal apophyses almost entirely obliterated, being present only as very minute tooth-like projections. The tegmina slender elongate oval, their apices reaching about to the middle of the second abdominal segment, their upper half being light olive-green, and the lower portion piceous.

Length of body, ♂, 22 mm., of pronotum, 4.6, of tegmina, 3.5 mm., of hind femora, 12 mm.

Habitat.—The single male specimen at hand, the type, comes from Puerto Bertoni, Paraguay, where it was taken during the month of January, by A. de Winkelried Bertoni. It is numbered 712.

This insect is to be recognized also by its very deeply sulcate fastigium and frontal costa and by the ferruginous antennae that become strongly infuscated apically, while the

specimens at hand of both *obesus* and *chapad* have them pallid. The annexed table will aid in separating the species of the genus.

SYNOPSIS OF THE SPECIES OF PARASCOPAS.

A. Body rather obese, the transverse sulci of the pronotum profound. Lower edge and lower half of inner face of hind femora blood-red ..... **obesus** Gig.-Tos.

AA. Body more elongate, the transverse sulci of the pronotum not profound but still well defined. Lower edge and inner face of hind femora flavous.

b. Entire under surface of body blood-red. Cerci of male with the apical two-thirds very slender, equal, directed upwards and a little to the rear; supra-anal plate scarcely sulcate and largely pallid. ..... **sanguineus** N. Sp.

bb. Entire under side flavous. Cerci of male with the apical two-thirds moderately heavy, sigmoid, flattened, the apex directed to the rear; supra-anal plate largely infuscated, deeply sulcate at middle. ..**chapadensis** Rehn.

Osmilia violacea (Thunberg).

Specimens of the genus Osmilia (No. 404) are referred to Thunberg's *violacea*. They are typical of those with bluish wings found throughout Southern Brazil, Paraguay and Northern Argentina. Whether or not they are distinct from the *coelestis* Burmeister I am not prepared to state at this time.

Rhipipteryx brullei Serville.

The collection at hand also contained two specimens of this little gryllid. It was numbered 395.

THE CLASSIFICATION OF THE MELOIDAE:—I note that Dr. Wellman, in his very interesting paper on this group, uses the subfamily name Zonitinae, proposed by Ganglbaur in 1907. The name Zonitinae has however been long in use for a subfamily of Mollusca, of which the genus *Zonites* is the type. I suggest that the Coleopterous Zonitinae be called Nemognathinae, with *Nemognatha* as the type genus. The tribe Zonitini then takes the name Nemognathini, proposed in 1862 by LeConte. With regard to the name of the family, I am altogether disposed to adhere to Meloidae, which seems to be justifiable historically and on the grounds of long usage.—T. D. A. COCKERELL, Boulder, Colorado.

Two New Trypetidae from China.

By D. W. Coquillett.

Trypeta quinaria n. sp.

Yellowish, the metanotum largely black. Lower front corner of the third antennal joint produced in the form of a sharp tooth, arista short-plumose. Body somewhat polished. Wings hyaline, marked with five brown crossbands, all except the first two crossing the wing; the first band is at the humeral cross vein; the second begins at the apex of the auxiliary vein and extends to the sixth vein; the third begins at the apex of the first vein, passes over the small cross vein, ending just beyond the tip of the sixth vein; it is connected with the preceding band by the brown stigma; the fourth band begins at a point midway between the apices of the first and second veins and passes over the hind cross vein; the fifth band extends from the tip of the second vein to the middle of the second posterior cell, leaving the broad apex of the first posterior cell in the hyaline portion; third vein bristly to the last brown band; small cross vein near the middle of the discal cell. Length, 5 to 7 mm.

Hongkong, China. A specimen of each sex collected in 1908 by Mr. George Compere. Type No. 12,992, U. S. National Museum.

Oxyphora fenestella n. sp.

Head yellow, antennal grooves chiefly brown, a brown spot connects them on the upper part of the face; antennae yellow, the third joint brown, its lower front corner produced in the form of a sharp tooth; arista long-plumose; proboscis brown, palpi yellow. Thorax yellow, opaque gray pruinose, the center of the mesonotum and lower part of the pleura brown; scutellum yellow and with a basal triangular brown spot, four scutellar bristles. Abdomen yellow, a median spot on the first segment, a dorsal pair on the second, third and fourth, and the basal segment of the ovipositor, black. Legs yellow, the femora largely brown. Wings brown, rather sparsely covered with hyaline spots and dots; stigma brown, its apex yellowish hyaline; between apices of the first and second veins are two hyaline spots; between the apices of the second and third veins is only one hyaline spot, situated just beyond the tip of the second vein; the first posterior cell contains two hyaline dots alternating with two transverse pairs of hyaline dots; the hyaline dot in the apex of this cell is nearly one-third as wide as the cell; the discal cell contains three transverse pairs of hyaline dots; the ground color of the wings is of several shades of brown, and is varied by a few rather large yellowish spots; third vein bristly nearly to its tip, small cross vein near the middle of the discal cell. Length, 5 mm.

Hongkong, China. A female specimen collected in 1908 by Mr. George Compere. Type No. 12,993, U. S. National Museum.

The Butterflies of the Lake Tahoe Region.

By E. J. NEWCOMER, Palo Alto, Cal.

(Continued from p. 277)

8. **Melitaea anicia** Db. & Hew.

One ♀ at Deer Park (6500 ft.), June 10. Common about Glen Alpine in July and August, below 7000 feet. The form here is very much like Wright's *sierra*, which, I think, is at most a variety of *anicia* with the markings of the female blurred.

9. **Melitaea editha** Bdv.

Mr. Wright, in his "Butterflies of the West Coast," figures this species from Lake Tahoe. I did not take it.

10. **Melitaea whitneyii** Behr.

This is one of the commonest butterflies of the Canadian zone, gathering in large numbers about moist spots in the soil. It flies from early June until the middle of August. This butterfly, as Hy. Edwards has already said,* would appear to be the mountain form of *palla*. It differs from *palla* in being generally freer from black on the upper side. I have taken no black females of *whitneyii*, though the female of *palla* is much commoner than the red, in my experience. Behr distinguished *whitneyii* from *palla* chiefly by the absence of eye-spots in the submarginal band on the under side of the secondaries of the former. However, several of my mountain specimens have distinct eye-spots, and if one were to call these a different species from those without the spots, he would have two almost indistinguishable species flying in the same region, and would be splitting hairs besides. I have a number of specimens of *whitneyii* which aproach *hoffmani* in the concentration of the black markings on the upper surface.

11. **Melitaea hoffmani** Behr.

Not as common as the preceding, and occurring with it. The ground color of this species is more of a yellow, while that of *whitneyii* is fulvous.

* Rep. Wheeler Exp., V, 759.

12. **Phyciodes pratensis** Behr.

Mr. Williams reports this species from the Glen Alpine region.

13. **Phyciodes montana** Behr.

Quite as abundant as *Melitaea whitneyii,* and flying with it. This species resembles *mylitta,* but is larger. The dark markings are heavier in the male than those of *mylitta,* and in the female there is more yellow, and all the markings are more blurred than in the same sex of *mylitta.*

14. **Grapta zephyrus** Edw.

This species is not particularly common, but occurs from May until late August, and at all elevations.

15. **Vanessa californica** Bdv.

A rather common species in August below 8,500 feet. I noted an occasional specimen during July, and several in May, which latter had probably hibernated. Mr. Williams took the larvae on a species of *Ceanothus.*

16. **Vanessa antiopa** L.

Rather common in the Canadian Zone, appearing in May. Larvae comon on willows.

17. **Vanessa milberti** Godt.

Not common, but occurring all summer and at all elevations. I found the gregarious larvae on nettle (*Urtica gracilis*).

18. **Pyrameis huntera** F.

Occasional, July and August, Deer Park, from 6,200 to 8,500 feet elevation.

19. **Pyrameis cardui** L.

Fairly common from May until August at the same altitudes as the preceding. Larvae on *Carduus.*

20. **Pyrameis caryae** Hbn.

Rather abundant all summer up to at least 9,000 feet. I found the larvae on *Sidalcea spicata* Greene, a malvaceous plant.

21. **Junonia coenia** Hbn.

One specimen, July 3, and one, August 6, 1909, at Deer Park (6,500 feet).

22. **Limenitis lorquini** Bdv.

Commonest along the streams, but found on the mountain sides occasionally, up to 8,500 feet. It occurs from early June to September.

23. **Heterochroa bredowii** var. **californica** Butl.

A few seen at Deer Park along the creek in July and August.

24. **Satyrus silvestris** var. **charon** Edw.

This species is common on peaks above 7,500 feet, in July and August, and is often seen in the canyons below. I took no specimens that could be referred to *silvestris*.

25. **Chionobas ivallda** Mead.

A rather common butterfly at all elevations above 7,500 feet, particularly on rocky slopes and peaks. It is difficult to capture on account of its wariness and the character of the ground it frequents. Some of Mead's types came from Mt. Tallac and Freel's Peak, both near the southern end of Lake Tahoe.

26. **Thecla grunus** Bdv.

This is frequently seen about the scrub oak in August.

27. **Thecla californica** Edw.

Common in July and August below 8,500 feet.

28. **Thecla saepium** Bdv.

Very common in the Canadian Zone in July and August. I found the females more abundant than the males.

29. **Thecla nelsoni** Bdv.

I took several specimens of this beautiful little species in early July, 1907, at Glen Alpine Springs (6,800 feet), flying about the scrub oak.

30. **Thecla behrii** Edw.

A very common species in the Canadian Zone, particularly about the flowers of *Eriogonum;* occasional at higher elevations. Found in July and August.

31. **Thecla iroides** Bdv.

Occasional in July in the Canadian Zone.

32. **Thecla eryphon** Bdv.

Even rarer than the last. I have one taken June 26, and one July 11, at Deer Park (6,500 feet). Mr. Grinnell and Mr. Williams both have specimens from the Glen Alpine region, taken in July, and I noted one there in August.

33. **Thecla dumetorum** Bdv.

One, June 12, 1908, 6,500 feet, and one, July 23, 1909, 7,900 feet, both near Deer Park. Mr. Williams reports it from Glen Alpine.

34. **Chrysophanus virginiensis** Edw.

July and August, in the lower part of the Canadian Zone. Quite common along the dry beds of small streams.

35. **Chrysophanus editha** Mead.

Common after the middle of July in the canyons. The type specimens were taken near Carnelian Bay, at the northern end of Lake Tahoe. Mead says* the species appeared "in considerable numbers on the flowers of yarrow (*Achillea millefolium*)."

36. **Chrysophanus gorgon** Bdv.

One male, July 10, and one female, July 12, 1908, at Deer Park (6,500 feet).

37. **Chrysophanus mariposa**. Reak.

Mr. Williams took several specimens about July 20, in a meadow near Fallen Leaf Lake (6,540 feet), in the Glen Alpine region.

38. **Chrysophanus zeroe** Bdv.

Very common in the Canadian Zone, appearing late in June. I obtained a number of eggs by confining the female in a gauze bag over the food plant, which is *Polygonum douglasii* Greene.

* Can. Ent., X, 198, 1878.

39. **Chrysophanus helloides** Bdv.

Occasional, June to August, Deer Park (6,200 feet).

40. **Chrysophanus cupreus** Edw.

Never abundant anywhere; found in the lower Canadian Zone. It appears in June, and only a few tattered specimens can be found at the end of July. It has a decided preference for the flowers of the pussy paws (*Spraguea umbellata* Torr.).

41. **Lycaena fuliginosa** Edw.

Found at all altitudes below 8,500 feet; commonest at the higher altitudes. I did not take it before the middle of July.

42. **Lycaena heteronea** Bdv.

Fairly common in July and August at the lower elevations.

43. **Lycaena fulla** Edw.

The commonest *Lycaena* in the region. It occurs below 8,500 feet from the middle of June until September. There is some variation, particularly as to the size of the spots on the under surface. The larval food plant is *Lupinus meioanthus* Gray.

44. **Lycaena daedalus** Behr.

Quite common on the grassy canyon floors most of the summer. The larvae eat the flowers and green seeds of *Trifolium variegatum* Nuttall, and *T. cyathiferum* Lindl.

45. **Lycaena antiacis** var. **behrii** Edw.

I have a single specimen, taken at Deer Park June 25, 1908, at 6,500 feet, which is nearer *behrii* than anything else. It is, I think, the same form that Mr. Williams took at Shasta, in Northern California.* Mr. Williams found this species also at Glen Alpine at high altitudes.

46. **Lycaena sagittigera** Feld.

One specimen, Deer Park, July 14, 1909, at 6,200 feet. Mr. Williams has one from Glen Alpine, taken in July.

47. **Lycaena podarce** Feld.

Mr. Williams took a few specimens of *podarce* about Glen

* Ent. News, XX, 69, 1909.

Alpine, in the Canadian Zone in July. I have one female from Deer Park, July 15, 1909, elevation 6,200 feet, which has a very striking appearance on the upper surface, the ground color being broken by distinct whitish spots, corresponding to the median row of spots beneath.

48. **Lycaena enoptes** Bdv.

Fairly common at all altitudes, particularly on rocky peaks about *Eriogonum umbellatum* Torr., which, I think, is its larval food plant. Occurs from June to August, and probably September. In the males, the width of the marginal band varies considerably, as does the appearance of the orange stripe on the secondaries of the females.

49. **Lycaena shasta** Edw.

Mr. Williams took several males at 8,000 feet, near Glen Alpine.

50. **Lycaena acmon** Db. & Hew.

Quite common at all altitudes; June to August. It varies somewhat here as elsewhere. The food plant of the larvae is *Eriogonum umbellatum* Torr.

51. **Lycaena anna** Edw.

Rather common in the canyons, July and August.

52. **Lycaena pseudargiolus** var. **piasus** Bdv.

Common in the canyons. It appears as soon as the snow melts, and is in evidence until the middle of July or later.

53. **Neophasia menapia** Feld.

I saw this butterfly only at Deer Park (6,500 feet), and this is possibly its southern limit, as it has not been reported south of here. It appears about the middle of August, and may become abundant later. I took a pupal shell attached to a leaf of *Pinus jeffreyi*. There were also the remains of several parasitized larvae on the same tree.

54. **Pieris sisymbri** Bdv.

Flies from early June until August, and occurs oftenest above the Canadian Zone. I took several larvae on *Arabis glabra* Bruh.

55. **Pieris occidentalis** Reak.

Rather common everywhere in July and August. Mr. Grinnell has a male of the variety *calyce* Edw., taken July 25, 1907, near Glen Alpine Springs (6,540 ft.), and Wright reports this variety from Tahoe.

56. **Pieris rapae** L.

Quite common in the canyon at Deer Park during July and August.

57. **Anthocharis ausonides** Bdv.

This species occurs in some numbers from June until the last of July, and at least to 9,000 feet elevation. The individuals average smaller than those taken about San Francisco Bay.

58. **Anthocharis sara** var. **reakirtii** Edw.

A rather common butterfly below 8,500 feet elevation; flies from the middle of May until the last of July. The specimens in this region are of the form *stella* Edw., in which the females are yellow instead of white. The males also have a yellowish tinge. The larvae of this and the preceding species feed on a number of cruciferous plants, particularly *Arabis glabra* (L.) Bruh., *A. lyallii* Wats., and *A. duriuscula* Greene.

59. **Colias eurytheme** Bdv.

This occurs all summer and is found in proper season at all elevations, the commonest in the Canadian Zone. I took the variety *eriphyle* Edw. at Deer Park, in July and August, below 7,000 feet elevation.

60. **Parnassius clodius** Mén.

This species is common at the lower elevations from early June until August, and probably later. The variety *ménétriesii* Hy. Edw. also occurs. I have several specimens with the spots pinkish yellow, which would bring them near the variety *altaurus* Dyar. They are worn specimens, however, and may have faded.

61. **Parnassius smintheus** Db. & Hew.

Wright reports the synonym *sayii* Edw., from "near Lake Tahoe." The variety *behrii* Edw. is not rare at altitudes of

8,000 to 9,500 feet in July and August. I took the eggs on and near *Sedum stenopetalum* Pursh., at 8,500 feet.

62. **Papilio zolicaon** Bdv.

This butterfly is frequently seen at all elevations, being found on even the highest peaks after the snow has melted. In the canyons it appears early in June.

63. **Papilio indra** Reak.

Never common anywhere, but found usually about the summits of rocky peaks. The males are frequently seen in the canyons about damp places, particularly in the vicinity of mineral springs, where one may often take specimens of all four Papilios. Away from these gathering places, it is very difficult to capture. It occasionally alights on flowers, but keeps its eyes open for the net. The females are quite rare. I took one at an elevation of 7,000 feet, which had just emerged from its chrysalis. The larvae of both *zolicaon* and *indra* feed on umbelliferous plants.

64. **Papilio eurymedon** Bdv.

Quite common from June to September in the Canadian Zone and occasionally above 8,000 feet. The specimens are mostly darker than those from near sea level.

65. **Papilio rutulus** Bdv.

Common in the Canadian Zone all summer, flying with the preceding species along the stream courses. The larvae feed on willows.

66. **Pamphila comma** L.

A rather common species at all elevations, June to August. My specimens, according to Dyar's "Review," are the variety *colorado* Scudd.

67. **Pamphila sylvanoides** Bdv.

Not rare in the Canadian Zone, and found sparingly in the Hudsonian, July and August.

68. **Pamphila agricola** Bdv.

Several specimens in August, Deer Park (6,500 feet).

69. **Pamphila sabuleti** var. **tecumseh** Grinnell.

This small species occurs rather abundantly in grassy places in the Canadian Zone. Found from June to August. Mr. Grinnell tells me my specimens are "perfectly typical."

70. **Pyrgus tessellata** Scudd.

A very common species below 8,500 feet, June to August. Larvae on *Sidalcea spicata* Greene.

71. **Pyrgus caespitalis** Bdv.

Not so common; Canadian Zone, June and July.

72. **Nisoniades persius** Scudd.

Not rare, from June to August.

73. **Nisoniades propertius** Lint.

Mr. Williams took this species at Glen Alpine. I have one specimen, July 28, Deer Park (6,200 feet).

74. **Nisoniades tristis** Bdv.

Mr. Grinnell has several specimens from Fallen Leaf Lake, June 25-27.

75. **Eudamus mexicana** H. S.

Rather common in the Canadian Zone, late June to August.

Dates of Koch's Genera as Published in Die Pflanzenläuse.

By O. W. Oestlund, University of Minnesota.

There appears to be a lack of uniformity among writers on aphids in assigning dates to the genera established by Koch in his monographic work, issued in parts extending over the years 1854-1857. While some use the first or last date alone for all genera, others use both combined. Hunter, in his list of the Aphididae of North America, published as Bulletin 60 of the Iowa Experiment Station in 1901, gives the dates 1855-1857 for the whole work and assigns Heften 1-4, pp. 1-134 to 1855; Heften 5-7, pp. 135-236 to 1857. On what facts this is based is not clear. The citation may be from Hagen with the omission of the earlier date (1854), and of parts 8 and 9, and with the misplacement of the dates 1855 and 1857 in connec-

tion with the parts to which they properly belong. That the work was issued in nine parts or Heften is apparent from the remarks of Kaltenbach in his Nachträgliche Bemerkungen on page 329 (328 of later copies) of the work itself.

Carus, in Bibliotheca Zoologica of 1861, gives the dates 1854-1857 for the whole work and assigns pages and plates to each of the nine parts, as will be given in the following, but does not give the year for the individual parts. Hagen gives the dates for the parts in the Bibliotheca Entomologica as follows: Parts 1-4, pp. 1-134; 24 plates, 1854. Parts 5-7, pp. 135-236; 18 plates, 1855. Parts 8 and 9, pp. 237-336; 12 plates, 1857.

The number of copies distributed in parts was probably small and on the completion of the work in 1857 the greater part of the edition was united into one with a new title page dated Nürnberg, 1857, in which condition most of the copies now to be had are found. A copy in the Department Library of Animal Biology of the University of Minnesota bears evidence of one that was issued in the nine original parts though later bound into one. The plates of this copy, as probably all that were issued as separate parts, are much superior to any of the later copies that I have examined. The copy bears the title page, dated Nürnberg, 1857, which was probably issued with the last part, but following this it also has the title page of the Ersten Heft dated Nürnberg, 1854. The copy also shows the torn off covers of the original parts between many of them as given by Hagen. A second copy in my possession has been separated into the nine parts as originally printed based upon the evidence of the printer, the binder, and Carus' and Hagen's data, which give further evidence of how the work was published. It is a well known fact that bookmakers will not print a sheet of less than 16 pages except at the end of a work or for other good reasons. The presence of an incomplete sheet at the end of each part, except one, therefore, gives additional evidence that the part was completed before the following was undertaken. All the facts as far as known

to me are indicated in the following distribution of parts and dates:

Parts 1-4 were issued in 1854 (Hagen).

Heft I, pp. 1-8 and 1-36. Plates 1-6, 1854:

Sheets 1 and 2 are complete, but sheet 3 has only four pages. The title page to this part is also known, dated Nürnberg, 1854.

Heft II, pp. 37-72. Plates 7-12, 1854:

Sheets 4 and 5 are complete, sheet 6 has only four pages.

Heft III, pp. 73-100. Plates 13-18, 1854:

Sheet 7 is complete, sheet 8 of twelve pages.

Heft IV, pp. 101-134. Plates 19-24, 1854:

Sheets 9 and 10 complete, sheet 11 of only two pages. New genera described in these four parts that should bear the date 1854 are: *Chaitophorus, Hyalopterus* and *Rhopalosiphum.*

Parts 5-7 were issued in 1855 (Hagen).

Heft V, pp. 135-166. Plates 25-30, 1855:

Sheets 12 and 13 both complete.

Heft VI, pp. 167-196. Plates 31-36, 1855:

Sheet 14 complete, sheet 15 of fourteen pages and a blank leaf present in two copies that I have seen.

Heft VII, pp. 197-236. Plates 37-42, 1855:

Sheets 16 and 17 are complete, sheet 18 of eight pages. New genera that are described in these three parts that should bear the date 1855 are: *Siphonophora, Drepanosiphum, Callipterus* and *Dryobius.*

Parts 8 and 9 were issued in 1857 (Hagen).

Heft VIII, pp. 237-274. Plates 43-48, 1857:

Sheets 19 and 20 complete, sheet 21 of six pages and in one copy seen also the bnak leaf to complete the half sheet.

Heft IX, pp. 275-336. Plates 49-54, 1857:

Contains sheets 22-25. New genera described in these two parts that should bear the date 1857 are: *Asiphum, Phyllaphis, Gladobius, Toxoptera, Glyphina, Pachypappa, Anoecia, Mindarus, Prociphilus, Stagona, Thecabius, Tychea, Amycla, Endeis* and *Anisophleba.*

Description of a new Genus and four new Species of North American Cleridae.

By A. B. Wolcott, Chicago, Ill.

The few species here made known have been carefully chosen, the object in view being to select only such species as are very distinct from their nearest allies, hence no confusion should arise as a result of describing them at this time.

Cymatodera cognata sp. nov.

Piceous, subopaque, antennæ and an irregular, obscure median fascia rufo-piceous, sparsely pubescent. Head densely confluently and rather coarsely punctate; eyes feebly prominent. Antennæ slightly longer than head and thorax, joints two to ten subequal, slender, eleventh a little longer. Thorax nearly one-half longer than wide, moderately constricted in front of middle, strongly compressed at sides behind, base narrower than apex, surface moderately coarsely but not very densely punctate, ante-scutellar impression distinct, limited each side by a prominent tubercle. Elytra nearly twice as wide as base of thorax, humeri distinct, sides slightly divergent posteriorly, apices conjointly rounded, disk with striæ of moderately fine punctures, those of the sutural striæ extending scarcely to middle, the lateral striæ much longer, an obscure, irregular fascia at middle scarcely attains the suture. Body beneath finely and sparsely punctate, abdomen and legs subrugose. Length 8-9.5 mm.

Male.—Fifth ventral segment feebly emarginate, longitudinally carinate at middle from base to apex; sixth oval, feebly emarginate; last dorsal oval, shorter and narrower than the corresponding ventral, subtruncate at apex.

Female.—Fifth ventral broadly, feebly emarginate, feebly carinate at middle; sixth oval, incised at apex; last dorsal elongate oval, broadly triangularly emarginate at apex.

Las Vegas, Nevada (type ♂); Stockton, Utah (type ♀). Both specimens were collected by Mr. Tom Spaulding, and were sent me by Mr. Warren Knaus, to whom my thanks are due for one of the types.

This species is of the form of *inornata*, but less slender, and with elytral sculpture nearly as in *fuscula*. It is nearest allied to the species of the *belfragei* group (*belfragei, morosa, flavosignata* and *umbrina*), from all of which it differs in secondary sexual characters of the abdomen and in other details.

Mr. Charles J. Gahan, in his recent valuable contribution: "Notes on Cleridæ and Descriptions of some new Genera and Species of this Family of Coleoptera." (Ann. Mag. Nat. Hist., Lond., Ser. 8, Vol. V, Jan., 1910, pp. 55-78), calls attention to the fact that the North American species, *Thaneroclerus sanguineus* Say. differs from the genus type (*E. buqueti* Lefebvre) in several important details of structure; these differences are of sufficient moment to necessitate the erection of the following new genus:

ZENODOSUS gen. nov.

Eyes oval, finely granulate, entire; front coxal cavities open behind; flanks of prothorax non-carinate.

Type of the genus *Zenodosus* (*Thaneroclerus*) *sanguineus* Say.

In *Thaneroclerus* Lef., the eyes are small, feebly emarginate, round and coarsely granulated, the flanks of the prothorax distinctly carinate, and the front coxal cavities closed behind.

An examination of material in my collection shows, however, that the Cuban species (*T. girodi* Chevrolat), is a true *Thaneroclerus*.

Clerus ichneumoneus Fabr. var. **knabi** nov.

Form, size and sculpture as in typical form, the markings and color also similar, but with the apical fourth of elytra pale reddish testaceous, each elytron with a rather large, ante-apical, black maculation. Length 11.5 mm.

Marion Co., Florida.

This variety, if indeed such it be, was sent me several years ago by Mr. Frederick Knab, since which time I have examined not less than four hundred specimens of *ichneumoneus* without finding another individual either identical with, or intermediate between this and the typical form, hence *knabi* may eventually prove to be a distinct species.

Hydnocera maritima sp. nov.

Elongate, feebly shining, olive-green; head and thorax æneous; antennae, labrum, palpi, knees, tibiae and tarsi testaceous. Head (including the moderately prominent eyes) very slightly wider than the thorax, coarsely, densely rugose. Thorax one-third wider than long,

apical constriction strong; sides broadly, strongly dilated, posteriorly feebly convergent; subapical transverse impressed line deep, middle of disk anteriorly with a short but distinct longitudinal sulcus, basal impressed line distinct, near the flanks turning obliquely forward; lateral foveae small, but deep and distinct; surface coarsely, densely punctate. Elytra rather depressed, fully covering the abdomen, slightly wider than the head; humeri obtuse; sides parallel; surface coarsely, densely punctate, somewhat scabrous toward apices, the latter obtusely rounded, not serrate but irregular in outline, dehiscent at suture. Upper parts rather densely clothed with short, recumbent, whitish pubescence, with longer, erect dark hairs intermixed; ventral surface and legs clothed in like manner but more sparsely. Length 5-5.5 mm.

Truro, Mass., June, '92. "On beach grass, seems to be a seashore species." (Fredk. Blanchard, *in litt.*). Two specimens, ♂ and ♀..

Maritima bears a slight resemblance to *subfasciata* Lec., but differs from that species in many details; in the present species the form is more elongate, the prothorax proportionately broader, the sculpture and color decidedly different, and the elytral apices are non-serrate.

I am indebted to Mr. Frederick Blanchard for the type (♂) specimen, a cotype (♀) is in Mr. Blanchard's collection. Truro, Mass., is a town on Cape Cod peninsula.

Hydnocera tibialis sp. nov.

Elongate, dark green with slight metallic reflections; head, thorax and elytra varying from bright green with faint metallic lustre, to bright blue; antennæ (club slightly infuscate at tip), palpi, tibiae and tarsi (outer joints of latter infuscate) pale testaceous; pubescence whitish, erect, moderately dense and long. Head including the large prominent eyes scarcely narrower than elytra at base, finely, transversely rugose. Thorax wider than long, distinctly transversely rugulose, subapical and transverse impressed lines only moderately distinct, lateral foveae feebly impressed. Elytra very slightly convex, fully covering the abdomen, humeri moderately prominent, sides very feebly sinuate and subparallel, apices separately rounded and rather strongly serrate, dehiscent at suture, surface coarsely, very densely punctate, punctuation toward apices a little more dense, apices not at all tumid. Body beneath and legs shining, conspicuously clothed with moderately long whitish hairs. Length 4-4.8 mm.

Pine Ridge, Nebraska. Types (♂ and ♀) in my collec-

tion; cotypes (three) in the collection of the University of Nebraska.

For the privilege of examining the above specimens, as well as the other Clerid material in the collection of the University of Nebraska, I am under deep obligations to Prof. L. Bruner and Mr. Charles H. Gable.

Hydnocera gerhardi sp. nov.

Very slender, shining, sparsely clothed with short, fine pubscence, black, head and thorax rufo-piceous, apical and basal margins of the latter dull rufous, lower part of front, mouth, antennae, elytra, legs and last abdominal segment pale yellow. Head (including the very prominent eyes) as wide as elytra at base, nearly smooth (very finely and very sparsely punctulate). Thorax much longer than wide, subcylindrical, subapical constriction moderate, surface alutaceous, disk at middle very finely rugulose. Elytra elongate, humeri feeble, parallel, not shorter than the abdomen, entirely pale yellow, coarsely, deeply, rather densely, partially confluently punctate, apices separately, rather acutely rounded, strongly serrate, dehiscent at suture. Legs elongate, pale yellow, outer joints of tarsi fuscous, posterior femora extending to tip of elytra. Length 4.8 mm.

Yuma, Arizona. Collected by Wesley D. Lipe.

A very elongate species, in fact more slender than any other known to me; it is perhaps nearest allied to *bicolor* Lec., from which it is, however, very distinct, the size being very nearly twice as large, the head not at all rugose, the elytra densely, not sparsely punctate, the apices not tumid, and the coloration is different.

Named in honor of my friend Mr. William J. Gerhard.

FLATTERED.—First Fly—"Have you seen that new encyclopedia?"
Second Fly—"No. Is there anything about us in it?"
First Fly—"Certainly; an entire page is devoted to us—the fly-leaf."
—Newspaper.

Mr. JAMES CANTLIE, hon. secretary of the Pellagra Commission, has received, as we learn from the London *Times*, the following telegram from Dr. Sambon, dated Rome, May 13: "The pellagra field commission has definitely proved that maize is not the cause of Pellagra. The parasitic conveyor is the *Simulium reptans*."—(*From Science.*)

Four new Reduviidae.

By Nathan Banks.

Of the four species described below, two have been in my collection for years and are taken in the Eastern States, the other two are from Arizona and sent in recent years by Mr. Biederman.

Pnirontis modesta n. sp.

Pale greyish yellow, with a faint median dark line on the pronotum, four black dots on each lateral margin of the venter and sometimes a black spot in front of each eye. Four large spines under femur I, the basal one short, the next about as long as width of the joint, third still longer, and fourth the longest; the third is a little nearer to the fourth than to the second; tibia I has on the inner side three long spines (closer together than in *Pn. languida*) and near the last one on the lower side is a long, erect, stout spur or spine. Tip of abdomen forked as in *Pn. languida*, but the lobes are more divaricate and broader at the tips than in that species. Length 11 mm.

From Falls Church, Va., and Glencarlyn, Va., in June and July. Resembles *Pn. languida*, but is smaller, and readily separated by the longer spines on femur I, and the long spur on tibia I.

Spiniger arizonica n. sp.

Shining deep black; the posterior margin of the pronotum narrowly reddish, broader at the humeri, and from thence extends inwards and forwards a narrow red line to the transverse furrow, lower lateral margin narrowly reddish, lateral ends of the collar also reddish, scutellar spine mostly reddish; dorsum of abdomen red, a black spot at apex of each segment on the connexivium; venter black, with a broad median red stripe reaching to middle of the penultimate segment, and the lateral margins rather broadly red, almost interrupted with black on the apical third of most of the segments. Anterior lobe of the pronotum smooth, a deep median groove, and two grooves each side reaching only one-half way forward. Posterior lobe depressed on middle basal part, and here strongly, transversely rugose, growing weaker behind; humeri moderately prominent, right-angled; the scutellum margined, spine cylindrical oblique, and nearly as long as the scutellum; meso and metapleura vertically, coarsely striate; in front and rather between bases of antennæ are two short, slightly divergent ridges; legs and antennæ all finely, densely hairy; ventral segments of abdomen finely transversely striate; male genital lobe smooth on sides, hairy below and behind, rounded, with a slight apical swelling containing a median

depression. Wings reaching beyond tip of the abdomen. None of the femora are swollen, and there are no spines on the pronotum. Length 22 mm.

From Palmerlee, Arizona (Biederman).

Zelus ferox n. sp.

Pale yellow; sides of head in front and behind the eyes dark; anterior lobe of pronotum with black on sides, and a narrow incurved stripe each side nearly connected to each other behind middle; posterior lobe broadly dark on sides, black at humeri; basal part of wings black; dorsum of abdomen reddish; below on prosternum is a black spot in front of each coxa I; all femora with a band beyond middle, and one toward tip dark, sometimes a faint band near base of tibia, and sometimes the hind and middle femora have a band before middle. Head short (shorter than in *Z. exsanguis*) with a distinct black-tipped tubercle over base of each antenna; ocelli not two diameters apart; a broad deep furrow on middle of pronotum, fading out toward hind margin, humeri acute, upturned, but scarcely produced; a faint tubercle each side nearer hind edge of pronotum; pronotum and basal part of wings with many fine, short, yellowish hairs; wings extend beyond tip of the abdomen. Length 13 mm.

From Palmerlee, Arizona (Biederman).

Zelus audax n. sp.

Brownish yellow; head with broad black stripe behind each eye, leaving a narrow, median, yellow line, also blackish in front and between eyes; anterior lobe of pronotum black each side and on the lateral margin, posterior part of the posterior lobe blackish; abdomen reddish above, black on sides at tips of the segments. Venter pale, a black spot behind coxa I and also a smaller spot in front, a spot each side at base of each ventral segment, larger near the base of the abdomen; coxæ mostly dark; a broad band beyond middle, and one before tip of each femur; also two or three fainter bands on the tibiæ; second joint of antennæ with broad band near middle, and the tip dark, rest of antennæ mostly dark, sometimes pale at base of third joint. Head long and slender, ocelli more than two diameters apart, no tubercles over base of the antennæ; anterior lobe of the pronotum with a deep median groove; posterior lobe with middle and lateral depressions, the ridges terminating behind in four large, subequal conical tubercles, the lateral ones at the humeri. Wings extend beyond tip of abdomen; body slender. Length 12 mm.

From Sea Cliff, N. Y., in cedar trees, also Falls Church, Va.

Related to *Zelus* (*Pindus*) *socius*, but not as dark, and legs differently marked.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

TO CONTRIBUTORS.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., JULY, 1910.

Under the heading of the Doings of Societies this month, we publish the Preliminary Program of the First International Entomological Congress. We consider this Congress a very great event as it is evidence of the wonderful strides our study has made and the world-wide recognition of the pursuit of entomology, otherwise it would probably not be possible to successfully conduct an International Congress.

The study is no longer classed as one of doubtful value and the individual who pursues it is no longer considered non compos mentis. The study of insects is destined to become, in many ways, the most important natural history work known to man. Insects at the present time play a very important part in their relation to human beings and other animals and while recognition of this fact is becoming more and more apparent, we believe that even now there are but few who see the stupendous importance of medical entomology and the vast value of the complete solution of some of the economic problems, like the destruction of the mosquito and the house-fly, as annoying pests alone, irrespective of their danger as carriers of disease. Instead of being a small and insignificant branch of zoology, entomolgy will far outweigh in importance many other branches of the study of living organisms.

Perhaps some day we may receive a notice of an Entomological Congress containing a statement that sectional meetings will be held to consider other branches of zoology.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

FEMALE OF AESHNASOMA RIVERTONENSIS Johnson.—Like the male with these exceptions:—Form slightly more robust.—Wings a little wider and 22 mm. long. Legs.—Front and middle pairs vary as follows:—femur 13 to 16 mm.; tibiae 13 to 15 mm.; metatarsus 19 to 22 mm. Hind pair:—femur 18 mm.; tibiae 20 mm.; metatarsus 28 mm. One specimen taken at Riverton, N. J., VII, 12.08 by C. T. Greene and in his collection.

For description of male see Proc. Boston Soc. Nat. Hist., Vol. 34, No. 5—pp. 115 and 116.—CHAS. T. GREENE.

DR. HENRY SKINNER, PROF. HERBERT OSBORN AND DR. W. J. HOLLAND, have been appointed delegates to the First International Entomological Congress and the Eighth International Zoological Congress, as representatives of the Entomological Society of America. The Entomological Congress meets in Brussels, Belgium, from the first to the sixth of August, and the Zoological Congress, in Gratz, Austria, from August fifteenth to the twentieth. Dr. Skinner has also been delegated to represent the Academy of Natural Sciences, of Philadelphia, and the American Entomological Society, at the Entomological Congress.

FURTHER NOTE ON LARVA OF EUMAEAS ATALA.*—At the time of writing description of larva of Eumaeas atala, I had an opportunity to indentify the food plant. Subsequently in April, I re-visited Miami, Fla., and learned more of it. The plant upon which these handsome larvae swarm is known to the natives as "Compte," and the butterfly is known as the "Compte-fly". I was gravely informed that these "worms" made the butterfly, but nobody could account for the presence of the worm. This "Compte" is a variety of Cassava or arrow-root, and its botanical name may be found somewhere in the following list of synonyms: Janiyha manihot, Manihot utilissima, Jatropha manihot, Manihot aipi, Manihot loeflingi, Manihot palmata. It is exceedingly common on the high ground about Miami and southward, and some effort has been made to employ it commercially in the manufacture of cassava or tapioca starch.—J. L. HEALY.

*See Scudder; Mem. Boston Soc., N. H., 2, 413, 1875. Schwarz, Insect Life, 1, 37, 1888.

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), excluding Arachnida and Myriapoda. Articles irrelevant to American entomology, unless treating of new genera, will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted. This (°) following a record, denotes that the paper in question contains description of a new genus; while this (*), that of a new North American form.

For complete record of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

1—Proceedings, Academy of Natural Sciences of Philadelphia. **4**—The Canadian Entomologist. **7**—U. S. Department of Agriculture, Bureau of Entomology. **9**—The Entomologist, London. **11**—Annals and Magazine of Natural History, London. **19**—Horae Societatis Entomologiae Rossicae. **22**—Zoologischer Anzeiger, Leipzig. **38**—Wiener Entomologische Zeitung. **40**—Societas Entomologica, Zurich. **51** — Novitates Zoologicae, Tring, England. **55**—Le Naturaliste, Paris. **56**—Mittheilungen, Schweizerischen entomologischen Gesellschaft. Schaffhausen. **81**—Biologisches Centralblatt, Erlangen. **84**—Entomologische Rundschau. **92**—Zeitschrift fur wissenschaftliche Insektenbiologie, Ber lin. **96**—Bulletin Trimestriel, Societe d'Histoire Naturelles de Macon, France. **143**—Ohio Naturalist, Columbus. **184**—Journal of Experimental Zoology, Philadelphia. **189**—Pomona Journal of Entomology, Claremont, Cala. **193**—Entomologische Blatter, Nurnberg. **196**—Arkiv for Zoologie, Stockholm. **206**—Annals, Scottish Natural History, Edinburgh. **207**—Anales, Academia de Ciencias Medicas, Fisicas y Naturales de la Habana, Rivista Cientifica. **216**—Entomologische Zeitschrift. Stuttgart. **217**—Bulletin, Societe Entomologique d' Egypte. **249**—Journal, Biological Chemistry Baltimore. **251**—Annales, Sciences Naturelles, Zoologie. Paris. **252**—Annuario, Museo zoologico della R. Universita di Napoli (Nuova Serie). **253**—Archivum Zoologicum. Budapest. **254**—Archives de Parasitologie. Paris. **255**—West Virginia Agricultural Experiment Station. Morgantown. **256**—Science Bulletin, Museum of the Brooklyn Institute of Arts and Sciences.

GENERAL SUBJECT. Houlbert, C.—Les insects. Anatomie et physiologie generales. Introduction a l'etude de l'entomologie biologique. Paris. 1910. **Muhling, A.**—Streifzuge durch Kleine Sammlungen. **216**, xxiv, 32. **Oshanin, B.**—Tables generales des pub-

lications de la Societe Entomologique de Russie, 1859-1908. **19,** xxxviii, Supplement. 1909. **Pierce, W. M.**—Fumigation Studies-II. Does ordinary contract fumigation pay? **189,** ii, 176. **Redi, F.**—Experiments on the generation of insects (Translated from the Italian edition of 1688 by Mab Bigelow). Chicago. The Open Court Publishing Co. 1909.

APTERA. Neumann, L. G.—Notes sur les Pediculides. **254,** xiii, 497.

NEUROPTERA. Collections zoologiques du Baron Edm. de Selys Longchamps. Libellulinen 2. facs. x Catalogue systematique et descriptif, 1909. **Back, E. A.**—The woolly white-fly; a new enemy of the Florida orange (Aleyrodes howardi), **7,** Bull. No. 64, pt. 8. **Banks, N.**—Notes on our eastern species of the may-fly genus Heptagenia. **4,** xlii, 197 (*). **Crawford, D. L.**—American Psyllidae I. (Triozinae) **189,** ii, 228, (*). **Wasmann, E.**—Nils Holmgren's neue Termitenstudien und seine Exsudattheorie. (175, Beitrag zur Kenntnis der Myrmekophilen und Termitophilen). **81,** xxx, 303. **Williamson, E. B.**—A new species of Celithemis. **143,** x, 153 (*).

ORTHOPTERA. Hammerschmidt, J.—Beitrage zur Entwicklung der Phasmatiden. **97,** xcv, 221. **Rehn, J. A. G.**—On the Orthoptera of Bermuda. **1,** lxii, 3. Some notes on Idaho Orthoptera, with the description of a new species of Trimerotropis. **1,** lxii, 12 (*). **Schulthess Rechberg, A.**—Neue Orthoptera aus Transvaal. **56,** xii, 8, (°). **Stevens, N. M.**—An unequal pair of heterochromosomes in Forficula. **184,** viii, 227.

HEMIPTERA. Baker, C. F.—Californian Emesidae. **189,** ii, 225, (*). **Distant, W. L.**—Insecta Transvaaliensia: a contribution to a knowledge of the Entomology of South Africa. Part X. (°). **Essig, E. O.**—Notes on California Coccidae V. **189,** ii, 209. (*). Aphididae of So. California IV. 189, ii, 223. **Montandon, A. L.**—Quelques types d'Hemipteres de Guerin Meneville des Collections du Musee Zoologique de l'Universite de Naples. (Notes synonymiques et observations diverses). **252,** iii, No. 10. **Poppius, B.**—Ueber einige Anthocoriden aus Ceylon. **38,** xxix, 139 (°). **Quaintance & Sasscer**—The oyster-shell scale and the scurfy scale. **7,** Circular No. 121. **Ragues, P. V.**—Clasification Gundlach de Hemipteros Cubanos, conforme a los ejemplares que existen en el museo del instituto de 2a ensenanza de la Habana. **207,** xlvi, 425.

LEPIDOPTERA Barnes & McDonough—New species and varieties of No. American Lepidoptera. **4,** xlii, 208 (*). **Bordas, M. L.**—Les glandes cephaliques (Glandes sericigenes et glandes mandibulaires) des chenilles de Lepidopteres. **251,** x, 125, 1909. **Burgeff, H.**—Beitrage zur Biologie der Gattung Zygaena, II. **92,** vi, 144. **Cockle, J. W.**—Notes on a few butterflies found at Kaslo

and in northern Br. Columbia. **4,** xlii, 203. **Dognin, P.**—Heteroceres nouveaux de l'Amerique du sud. Fasc. I. Oberthur, Rennes. **Fassl, A. H.**—Neue Dismorphien aus West-Columbien. **40,** xxv, 9. **Gramann, A.**—Ueber den Simplon an den Lago Maggiore. **216,** xxiv, 30. **Hampson, G. F.**—Descriptions of new African moths. **11,** V, 430 (°). **Jordan, K.**—Some new moths (Morionia n. g. of Zygaenidae), **51,** xvii, 255 (°). **Paravicini, L.**—Beitrag zur kenntnis der sudamerikanischen Pieriden-Gattung Tatochila. **56,** xii, 21. **Pearsall, R. F.**—A new Stamnodes. **4,** xlii, 213, (*). **Smith, J, B.**—The Noctuidae of California I. **189,** ii, 179. **Thierry-Mieg, P.**—Descriptions de Lepidopteres nouveaux. **55,** xxxii, 119. **Wolley Dod, F. H.**—Noctuid notes. 4, xlii, 189.

DIPTERA. Bruce, D.—The development of Trepanosomes in Tsetse flies. **197,** lxxxii, 368. **Dean, W. H.**—The Sorghum midge (Contarinia sorghicola). Papers on cereal and forage insects. **7.** Bull. No. 85. pt. 4. **Gedoelst, L.**—Cordylobia rondhaini, n. sp., Diptere congolais a larve cuticole. **254,** xiii, 539. **Ludlou, C. S.**—Mosquito observations.—Continued. **4,** xlii, 193 (*). **Portchinsky, J.**—Sur les larves de Gastrophilus. **22,** xxxv, 669. **Rubsaamen, E. H.**—Ueber deutsche Gallmucken und Gallen. **92,** vi, 125, (°). **Stevens, N. M.**—The chromosomes in the germ-cells of Culex, **184,** viii, 207.

COLEOPTERA. Boode, E.—Ein Raubritten in Hinterhalt, **193,** vi, 141. **Brooks, F. E.**—Three snout beetles that attack apples, **255** Bull. No. 126. Snout beetles that injure nuts. **255,** Bull. No. 128. **Gantes, E.**—Les mesures de defense contre les vers du cotonnier, **217,** ii, 33. **Gebien, H.**—Coleopterorum catalogus. Pars 15: Tenebrionidae I. **Gortner, R. A.**—The origin of the brown pigment in the integuments of the larva of Tenebrio molitor, **249,** vii, 365. **Heinemann, R.**—Kafer in Maulwurfsnesten, **193,** vi, 121. **Jordan, H.**—Verdauung ausserhalb des Korpers (aussenverdauung) bei Carabus auratus, **40,** xxv, 13. **Kleine, R.**—Die Lariiden und Rhynchophoren und ihre Nahrungspflanzen, **193,** vi, 137. **Krausse, A. H.**—Die Phylogenie und geographische Verbreitung der Formen des Carabus auratus, **40,** xxv, 13. **Kleine, R.**—Die Lariiden und Rhyntine sheet: a medium for mounting the smaller Coleoptera, **9,** xliii, 141. **Parker, W. B.**—The life history and control of the hop fleabeetle (Psylliodes punctulata). **7,** Bull, No. 82 pt. 4. **Pic, M.**—Coleopteres exotiques nouveaux originaires d'Amerique, **55,** xxxii, 105, 115. **Reitter, E.**—Das Insektensieb, dessen Bedeutung beim Fange von Insekten, insbesondere Coleopteren, und dessen Anwendung, **193,** vi, 133. **Schaeffer, C.**—Additions to the Carabidae of N. A., with notes on species already known. **256,** i, 391, (*). **Strohmeyer, O.**—Neue Borkenkafer aus Abessynien, Madagaskar, Indien und Tasmania, **193,** vi, 126, (°). **Szombathy, C.**—Especes et varietes

nouvelles du genre Semiotus, **253,** i, 23, 1909. **Xambeu, C.**—Moeurs & metamorphoses des Coleopteres de la tribe des Chrysomeliens, **55,** xxxii, 105, 120.

HYMENOPTERA. Bugnion, E.—La structure anatomique du Trigonalys hahni, **56,** xii, 14. **Crawford, J. C.**—Descriptions of certain Chalcidoid parasites, **7,** Tech. Ser. No. 19, pt. 2, (*). **Gahan, A. B.**—Four new species of Hymenoptera. Chalcidoidea. Encyrtidae. **4,** xlii, 205 (*). **Hoppner, H.**—Zur Biologie der Rubusbewohner, **92,** vi, 133. **Kieffer, J. J.**—Beschreibung neuer sudamerikanischer im Zoologischen Museum zu Berlin aufbewahrtet Diapriiden, **84,** xxvii, 39 (°). **Metz, C. W.**—Bees of the genus Colletes from Mexico. **189,** ii, 191 (*). **Mocsary, A.**—Chrysididae in Territoris Syr-Dariae a Leone Wollmann collectae, **253,** i, 1, 1909, (°). **Parker, J. B.**—Notes on the nesting habits of Bembex nubilipennis, **143,** x, 163. **Rohrwer, S. A.**—Notes on Tenthredinoidea, with descriptions of n. s. **4,** xlii, 215 (*). **Schrottky, C.**—Neue sudamerikanische arten der bienengattung Prosopis, **38,** xxix, 133. **Trani, E.**—Di un nuovo proctotrupide parassita delle larve degli Anthrenus musaeorum, **252,** iii, No. 4, 1909. **Zavattari, E.**—Catalogo delle Mutille del museo Zoologico di Napoli. Con osservazioni critiche e sinonimiche e descrizione di nuove species, **252,** iii, No. 9.

Doings of Societies.

At a regular meeting of the Feldman Collecting Social held March 16th, 1910, at 1523 S. 13th Street, Philadelphia, eleven members were present; Mr. A. B. Champlain, of Harrisburg, Pa., visitor.

Mr. Wenzel made a communication on relaxing and remounting Coleoptera, using *cold* water (instead of hot) with a dash of ammonia in it. This not only relaxes the specimen and loosens the glue, if it is on a slip, but also removes the grease.

Mr. Champlain remarked on collecting Carabidae in the vicinity of Harrisburg, Pa., describing how many were taken at night by the aid of an acetylene lamp.

Mr. Daecke exhibited a species of Tachinidae, *Alophora diversa,* Coq., from Conenago in the fall when he collected about a dozen specimens. The wings of the males are infuscate and of the female hyaline, but unlike most Diptera the

eyes of both sexes are holoptic. He also exhibited his collection of Pipunculidae and Oestridae.

Adjourned to the annex.

GEO. M. GREENE, *Secretary.*

At a regular meeting of the Feldman Collecting Social, held April 20, 1910, at 1523 South Thirteenth Street, Philadelphia, twelve members were present. Mr. C. W. Fenninger, visitor. President Harbeck in the chair.

Mr. Daecke stated that he was not aware that the upper side of the abdomen of beetles has been used to differentiate closely allied species and he exhibited two specimens of *Cyllene pictus* and two of *C. robinae* with wings spread. The upper side of abdomen of *pictus* is reddish, anal segment black, that of *robinae* is all black. Both species have two rows of six golden yellow lunules each, along the abdomen, caused by yellow pile, except the anal segment which shows one median dorsal spot of golden which is narrow and oblong in *pictus,* and obtusely triangular in *robinae.* Also exhibited and recorded *Xylota tuberans* Will., from Browns Mills Junction, June 5, 1908, and *X. metallifera* Bigot, from Clementon, April 25, 1909, as new to New Jersey. These Syrphids were determined by Mr. Coquillet and are rather unusual for that State, as the former was recorded from Texas and the latter from Colorado. Also exhibited a specimen of *Bruchus mimus* Say. from Hummelstown, Pa., July 17, 1909, a species of which Mr. Wenzel has representatives from Kentucky and Louisiana.

Mr. C. T. Greene exhibited the following Diptera: *Metacosmus mancipennis* Coq., from Pemberton, N. J., July 11, 1909. (The type of this genus was described from the Pacific Coast). *Paralleloma flavovaria* Coq., Castle Rock, Pa., May 12, 1907. *Sphegina campanulata* Rob., from Roxborough, Pa., June 12, 1909; and a Lepidipteron, *Cirrhophanus triangulifer* Grote, Castle Rock, Pa., August 1, 1909, all collected by himself.

Mr. George M. Greene exhibited specimens of *Limonius stigma* Hbst. one from Glenside, Pa., April 28, 1901, collected

by himself, and one from Castle Rock, Pa., April 10, 1910, collected by C. T. Greene. (Two were taken on the latter date). Smith's 1900, N. J. List for this species gives "New Jersey," and the Amer. Ent. Soc. collection contains one without data.

Mr. Kaeber exhibited specimens of *Sphenophorus melanocephalus* Fabr., many of which were collected in the Philadelphia neck, April 16, 1910, under reeds along the shore, and one of *S. zeae* Walsh, also larvae of *Cryptorhynchus lapathi* Linn and workings of same in willow. Adjourned to the annex.

G. M. GREENE, *Secretary.*

A meeting of the American Entomological Society was held December 23rd, 1909. In the absence of the President and Vice-President, Mr. Philip Laurent occupied the chair. Eleven persons were present. The reports of the Treasurer, Curator and Librarian were read.

The following persons were elected to serve as officers for the year: *President,* P. P. Calvert; *Vice-President,* H. W. Wenzel; *Treasurer,* E. T. Cresson; *Recording Secretary,* Henry Skinner; *Corresponding Secretary,* E. T. Cresson, Jr.; *Curator,* Henry Skinner; *Librarian,* E. T. Jresson, Jr.; *Publication Committee,* E. T. Cresson, C. F. Seiss and B. H. Smith; *Executive Committee,* Philip Laurent, H. W. Wenzel and D. M. Castle; *Finance Committee,* J. W. McAllister, C. S. Welles and D. M. Castle.

HENRY SKINNER, *Recording Secretary.*

A meeting of the American Entomological Society was held April 28th, 1910. Mr. H. W. Wenzel, Vice-President, in the chair. Thirteen persons were present. The report of the Finance Committee was read and approved. A letter from Mr. R. P. Dow was read and inviting the Society to take part in the entomological outings of the New York and Brooklyn Societies on Memorial Day and July Fourth.

Mr. Rehn exhibited specimens of five species of Orthoptera from Alberta, Saskatchewan and Idaho. A new species of *Trimerotropis* and two females of a Decticid, *Idiostatus variegatus,* described from Pocatello and here recorded for the second time were the most desirable things in a good sized series from Idaho. A specimen of the curious Stenopelmatid, *Cyphoderris monstrosus* taken on the Saskatchewan River was commented upon and specimens of *Melanoplus kennicot-*

tii and *alaskanus*, both of which are rare in collections, were in the exhibition. All the specimens were secured by Dr. Skinner except the *Cyphoderris*, which was taken by Prof. Stewardson Brown.

Mr. Laurent exhibited the egg, larva and imago of *Gastropacha americana* and said the larva wonderfully mimics its surroundings.

Mr. Matthews showed specimens of some rare Australian species of Lepidoptera such as *Papilio laglaizei, Liphyra brassolis* and *Zeuzera boisduvalii*.

Mr. C. T. Greene reported the following Diptera as having been taken this year: *Neoascia distincta* Will. Malaga, New Jersey, April 3rd, and *Syrphus diversipes* Macq., Castle Rock, Pa., April 10th. Both species were taken by Mr. C. T. Greene.

HENRY SKINNER, *Recording Secretary.*

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia, was held December 23, 1909. Mr. Philip P. Laurent, Director, presiding. Eleven persons were present. The following persons were elected officers to serve for the year 1910: *Director,* Philip Laurent; *Vice-Director,* Henry W. Wenzel; *Treasurer,* E. T. Cresson; *Conservator,* Henry Skinner; *Secretary,* E. T. Cresson, Jr.; *Recorder,* Henry Skinner; *Publ. Committee,* E. T. Cresson and E. T. Cresson, Jr.

HENRY SKINNER, *Recorder.*

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held May 26th. Mr. Philip Laurent, Director, presiding. Twenty-two persons were present.

Dr. Philip P. Calvert gave an informal account of his recent entomological researches in Costa Rica. Mrs. Calvert and he arrived in that country May 1, 1909, and left it May 9, 1910. In a brief sketch of the physical features of Costa Rica, mention was made of the considerable difference in elevation between the coasts and the central region, the abundance of rivers, the sharply-marked division of the year into wet (May to November) and dry (December to April) seasons on the Pacific slope while on the Atlantic side the dry season is not so pronounced, one effect of this contrast being conspicuously shown in the much greater abundance of epiphytes

on tree-trunks and branches on the Atlantic slope than on the Pacific.

The principal objects of the speaker's researches were to collect data on (1) the seasonal distribution of the Odonata, (2) their larval forms, and (3) their habits. Emphasis was laid on the fact that he at no time planned the gathering of a large collection of specimens or the making of a complete exploration of Costa Rica. Headquarters were established at Cartago, on the line of the railroad, at an altitude of 4750 feet on the Atlantic slope, three miles from the divide. Very comfortable accommodations were found in Weldon's Hotel in that town, managed by Mr. Joseph Weldon, formerly of Pittsburgh and McKeesport, Pennsylvania. The town was clean, healthy, lighted with electricity, was supplied with good water piped to the houses, and was drained by an underground sewer system.

In furtherance of the first object of investigation mentioned above, collections and observations were made at intervals in the same places and as nearly as possible in the same spots, and record was made each day of all species seen. The principal points at which this work was done were as follows:

On the Atlantic slope,

Banana River region, 50 feet, Nov.
Guapiles, 984 feet, June, Nov.
Peralta, 1088 feet, Aug., Mar.
Turrialba, 2000 feet, July.
Juan Viñas, 2500-4000 feet, June, Aug., Oct., Dec., Feb., Mar., April.
Cachi, 3600 feet, Mar.
Cartago, 4750 feet, every month.
Volcano Irazu, 4750-11,300 feet, July, Sept., Mar.

On the Pacific slope,

Tres Rios, 4260 feet, and La Carpintera to 5700 feet, Dec., Mar.
Alajuela, 3100 feet, Sept., Dec.
Turrucares, 1800-2200 feet, Aug., Dec., April.
Surubres, 800 feet, Oct.
Puntarenas, 10 feet, Feb.
Province of Guanacaste (chiefly near Liberia and Santa Cruz), 0-2200 feet, Jan.

At all of these places search was made for larvae and their exuviae as well as for the imagos. Living larvae were car-

ried to Cartago and placed, usually singly, in tumblers or bottles of water, and the attempt made to rear them to transformation. An acceptable food for them was found in bloodworms (Chironomid larvae) which could be obtained in abundance near the town. Larvae of a number of species of Odonata were successfully reared,* including some from the eggs. The care of this living material involved the return of one or both of the investigators to Cartago at short intervals.

Collections of terrestrial Molluscs and Annelids, of Araneids, Orthoptera, Microdiptera, certain groups of Coleoptera and of Lepidoptera, and of bromeliadicolous animals were also made to a slight extent.

Gratifying progress in study of the Odonata was being made when, on April 13, 1910, severe earthquakes damaged houses, and even threw down some, in San Jose, Cartago, and other towns of the central plateau. The tremors continued during the remainder of the month, but were generally of decreasing intensity. On May 4, however, at 6.50 P. M., while Mrs. Calvert and the speaker were sitting in their room at Cartago, a most violent earthquake occurred, throwing them to the floor when they attempted to escape. The roof over them and three walls remained upright, but the fourth, of brick, crashed, partly into their room. When the shaking ceased for the time, they made their way over the debris to the window and escaped unhurt to the street, where they spent that night, the next, and the intervening day. The fallen wall destroyed and buried the larvae in rearing, but in the daylight all the other collections, notes, photographic negatives, etc., were recovered from the ruins.

Cartago and nearby villages were completely destroyed and offered no shelter. San Jose was badly damaged and the fear of renewed shocks drove people everywhere to tents and improvised huts in streets, parks and open places. With these unfavorable conditions and the approach of the rainy season, the investigators judged it best to return home to save themselves and their material from further loss.† They left Cartago May 6, on the first train to Limon, and sailed thence on May 9, three months earlier than planned and very much to their regret.

*Cf. Ent. News for June, 1910, page 264.

†Prof. J. F. Tristan, writing from San Jose, C. R., May 26, 1910, states that earthquakes had continued up to that date.

They were not ill during their whole stay in Costa Rica and attribute their entire freedom from fever to the healthfulness of a great part of the region visited, to their always sleeping under mosquito nets and, when abroad, to covering the exposed parts of their bodies, wherever mosquitos were noticed, with a mixture of citronella oil and cocoa butter (suggested by Dr. Henry Skinner), an ample supply of which was taken with them. Neither of them took a single grain of quinine during the year. Drinking water was boiled, except when it was rain water directly gathered and filtered through charcoal, otherwise Apollinaris, procurable throughout the country, was substituted.

Grateful acknowledgment was made of the kind aid received from many friends, both Costa Rican and foreign, to whom much of the success attained is due.

Dr. D. M. Castle, who had just returned from Florida, said the weather conditions there were very unfavorable for collecting. It was very cold and the winds were high. In spite of the unfavorable weather he managed to get some desirable species. Savannah and Tybee Island were visited. At Enterprise the weather was cold with no rain. Coronado Beach was visited and also Miami and at these places the conditions were very much the same. Sweep netting was not possible so the umbrella was largely used.

Mr. Rehn made a few remarks on the Acridean genus *Eotettix*, illustrating the same by specimens of four of the five known species. The fifth species is represented by the unique type in the Hebard collection. The distribution of the genus is now known to cover the coastal section of the southeastern United States from north-central Florida to southeastern North Carolina.

Mr. J. A. G. Rehn was elected a member and Mr. John H. West an associate.

HENRY SKINNER, *Recorder.*

In a former circular your attention was drawn to the First Congress of Entomology which will be held at Brussels from August 1st-6th of this year. We have now the pleasure of presenting the Preliminary Programme and inviting you to become a member of the Congress. Many governments, public institutions and societies have already signified their intention of sending delegates, and it is to be hoped that the gathering will be thoroughly representative of our science.

As we consider that friendly intercourse between Entomologists of various countries is of great importance for the furtherance of their studies, in which they often depend upon each other, the social side of the Congress has received our due attention and we are singularly fortunate in being assisted therein by an influential Honorary Reception Committee representing Belgium.

HONORARY COMMITTEE.

President, MM. F. Schoollaert, Minister President, Minister of Agriculture.

Members, le baron Ed. Descamps, Minister of Sciences and Arts; J. Renkin, Minister of Colonies; Em. Beco, Governor of the Province of Brabant; Adolph Max, Bourgmestre of the City of Brussels; le baron Léon Janssen, President of the Executive Committee of the International Exhibition.

The numerous attractions which Brussels offers, especially in Architecture and Art, are this year enhanced by the International Exhibition which takes place in this city and which should prove a further inducement for participating in the Congress. Thanks to the generosity of the committee, the members of the Congress will have free access to the Exhibition.

For the Preliminary International Committee:

G. Severin, General Secretary of the Congress; A. Lameere, President of the Congress.

(1) Anybody who takes an interest in any branch of Entomology, scientific or applied, may become a member of the Congress.

(2) The Congress will consist of:

(a) Honorary members.

(b) Life-members, who pay a life composition of at least £10. The life compositions will be invested as a permanent fund, of which only the interest will be at the disposal of the International Committee.

(c) Ordinary members, who pay a fee of £1.

(d) Ladies and children accompanying members may become Associates on payment of 10*s*. and have all the privileges of members, except the right of receiving the publications.

RULES.

(3) All payments should be made as early as possible, by check or money order, to A. H. Jones, Esq, Entomological Society, London, 11 Chandos Street, Cavendish Square, London W.

(4) The addresses and lectures will be distributed over five General Meetings and the following ten Sections:

1. Systematics; 2. Nomenclature and Bibliography; 3. Museology and History of Entomology; 4. Zoogeography; 5. Bionomy, Oecology, Cecidiology and Mimicry; 6. Physiology and Psychology; 7. Economic Entomology; 8. Medical Entomology; 9. Anatomy and Ontogeny; 10. Phylogeny, Palæontology and Evolution. The papers of wider interest will, as far as possible, be read at the General Meetings.

(5) Members who intend reading a paper, or, if prevented from attending the Congress, sending a paper in MS. to be read by some other member, are asked to fill in the accompanying form B and return it before the middle of July to G. Severin, rue Vautier, 31, Brussels.

(6) All manuscripts and illustrations must be in the hands of the committee by November 1st. No colored plates will be issued unless paid for by the author. Manuscripts only in Dutch, English, French, German, Italian, Latin, Portugese or Spanish can be accepted. Authors will receive 30 separate copies of their papers free of charge.

(7) Members who take part in the discussions and are desirous of having their remarks recorded in the Proceedings of the Congress, are requested to hand an abstract of their remarks to the Secretary, during the meeting.

(8) Inquiries about prices of rooms, etc., should be directed to M. G. Severin, who is assisted by a Housing Committee.

PRELIMINARY PROGRAMME.

The meeting will take place in the "Palais des Fetes," provided for such purposes by the committee of the Exposition Universelle. In the evenings there will be informal gatherings and official receptions.

Sunday, July 31st, 8 P. M.—Reception by the Entomological Society of Belgium.

Monday, August 1st, 9 A. M.—Visit to the Office in the

"Palais des Fetes" for the receipt of the definite programme, badges, etc. 10.30 A. M.—First General Meeting. Opening address by the President. Address of welcome by the represenative of the Government. Election of Officers and formation of Sections. 2 to 4 P. M.—Sections. 4.30 P. M.—Walk through the town, guides being provided by the Entomological Society of Belgium.

Tuesday, August 2nd, 9 A. M.—Second General Meeting. 2 P. M.—Sections. 4.30 P. M.—Visit to the Exhibition.

Wednesday, August 3rd, 9 A. M.—Third General Meeting. In the afternoon visit to the Museum of the Congo. Excursions to Tervueren, Foret de Soignes, Waterloo, etc.

Thursday, August 4th, 9 A. M.—Fourth General Meeting. 2 to 4 P. M.—Sections. 4.30 P. M.—Visit to the Musée Royal d'Histoire naturelle de Belgique.

Friday, August 5th, 9 A. M.—Fifth General Meeting. Constitution of a Permanent International Committee. Selection of the place of meeting of the Second Congress of Entomology. Section for Nomenclature and Bibliography. 2 to 4 P. M.—Sections. 7 P. M.—Banquet.

Saturday, August 6th—Excursions into the Ardennes, to Bruges, Malines, Antwerp or Spa.

N. B.—The final programme of Receptions and Excursions will be sent to members later.

Of the lectures and addresses of more general interest which have so far been announced, we mention the following:

W. Bateson. On Mendelism.

R. Blanchard. On Medical Entomology.

O. Cruz. On Prophylaxis of Yellow Fever at Rio de Janeiro.

F. A. Dixey. On Mimicry.

A. Forel. On the Distribution and Phylogeny of Ants.

G. B. Grassi. On the Transmission of Disease by Insects.

A. Handlirsch. On Fossil Insects.

R. Heymons. On the Ontogeny of Insects.

W. J. Holland. On the Preservation of Types.

J. Kunkel d'Herculais. On Locust-Plagues.

E. Wasman. On Ants.

Any additional information may be obtained from M. G. Severin, Secretary-General of the Congress, 31, rue Vautier, Brussels, Belgium, or Dr. Henry Skinner, Logan Square, Philadelphia, Pennsylvania.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Wanted in exchange, perfect specimens of the genus *Parasemia*, *Apantesis* and allied groups, also Pieridae and *Catocala*. List of duplicates will be sent on application; also want eggs of *Catocala* for cash or exchange.—M. Rothke, 835 Mathew Ave., Scranton, Pa.

Lepidoptera—Pupae of *cresphontes* and *troilus* to exchange.—F. Malkmus, 3735 Cottage Ave., St. Louis, Mo.

Lepidoptera—I have for exchange first-class *Catocala epione, lacrymosa, paulina, evelina, retecta, luctuosa, flebilis, robinsonii, curvata, obscura, residua, insolabilis, angusi, lucetta, ultronia, innubens, hinda, scintillans, nebulosa, palaeogama, anida, phalanga, habilis, basilis, cerogama, parta* ahd others. Wish *agrippina, subviridis, californica, frenchii, portia, aspasia, rosalinda, mariana, faustina* and *aholibah*.—Ernst Schwarz, 6310 Newstead Ave., St. Louis, Missouri.

I collect for cash. Locals only. Unique field. Price lists 2 cts. *Buprestis apricans*, 25; *Bradycinetus ferrugineus*, 35; *Dynastis tityrus*, 35; *Sandalus niger* ♀, 15. Red ♂, 25; black ♂, 20, etc.—A. H. MANEE, Southern Pines, N. C.

Papiliaj kokonoj, interŝanĝe. Mi deziras ricevi interŝanĝe, du specimenojn de la skarabo (*Prionus giganteus*) por kvina specoj de la pli grandaj papiliaj kokonoj de Norda Ameriko.—Howard Austin Snyder, Hermit Lane, Roxborough, Philadelphia.

Catocalae—Wanted for exchange or, preferably, cash, *sappho, marmorata* and southern and western species. Must be in fine condition.—Dr. Hermann Bosch, 25 East 65th St., New York.

Lepidoptera—I have for sale or exchange living pupae of *Papilio turnus, triolus, cresphontes; S. chersis, luscitiosa, modesta, quinquemaculata, achemon, undulosa, cecropia, polyphemus, promethia*, and many others as well as imagos. Want pupae of others not in my collection.—John Kythica, 1347 S. Scoville Ave., Oak Park, Ill., U. S. A.

Lepidoptera—Catocala wanted, particularly *sappho* and *marmorata*.—Dr. Hermann Bosch, 25 East 65 St., New York.

Wanted—For cash or exchange, pupae of all Sphingidae and Saturnians, also ova of Catocalae. Offer many rare North American and European Lepidoptera.—J. McDunnough, Decatur, Ill.

If you desire exchanges in North American and Exotic Lepidoptera, to our mutual advantage, please send me your address.—Paul A. Schroers, 3807 Folsom Ave., St. Louis, Mo.

Catocalae—Shall have larvae of *illecta* in April and chrysalids later, also larvae and pupae of other species for exchange. Wish species from Texas and the West, *marmorata, briseis, rosalinda, verrilliana* and *amasia*.—R. R. Rowley, Louisiana, Mo.

Micro-Lepidoptera.—Wanted, Coleophora species with larva cases and full data (including name of food plant) for exchange or cash.—W. Wild, 212 Law Exchange, Buffalo, N. Y.

I wish to secure by purchase or exchange *Basilarchia disippus* in quantity, particularly from the North, West and South.—J. F. Abbott, Washington University, St. Louis, Mo.

Coleoptera—Would like to correspond with beginners with view to exchanging Coleoptera. List sent on application. A few exotics on hand.—Wirt Robinson, West Point, N. Y.

For exchange—ENT. NEWS, Vols. XV, XVIII and XIX, all unbound and complete, except Vol. XV, No. 1, has first plate missing; wish tropical Lepidoptera in exchange.—Miss Kate W. Strong, Setauket, Long Island, New York.

Lepidoptera—I have for exchange *Catocala badia*, *antinympha* and *muliercula* exlarva for Catocalas not in my collection. I also offer Vol. X–XVI inclusive of the ENT. NEWS for cash or good exchange.—Henry Wormsbacher, 287 Central Ave, Jersey City, N. J.

Wanted, Cicindelidae, by exchange or purchase.—*O. submetallicus, hornii. D. pilatei. C. vestalia, bowditchi, spreta, plutonica, lauta, sierra, hyperborea, cyanella, tuolumnae, nevadica,* ditto var. *californica, striga, viridistincta.*—Wm. C. Wood, 51 Fifth Ave, New York.

Entomological News, Vols. 14 to 20 complete, for best offer.—Frank E. Moeser, 238 Guilford St., Buffalo, N. Y.

Will arrange to collect any Order or Group of insects and spiders of S. Calif. (San Gabriel Mts.) during this season, in exchange for perfect N. Amer. Lepidoptera.—Fordyce Grinnell, Jr., 572 N. Marengo Avenue, Pasadena, California.

Wanted—For cash, six living pupae of *Phlegethontius quinquemaculata* and six living cocoons of *Telea polyphemus.*—Annette F. Braun, 2702 May St., Cincinnati, Ohio.

I wish to purchase Volume XXXI of the Canadian Entomologist, for which I will pay $3.00; and the April Number of Volume XXXIV, for which I will pay $1.00.—J. F. Abbott, Washington Univ., St. Louis, Mo.

Saturnidae—Have always for exchange ova, cocoons or set imagines of Japan, Africa, Ceylon, India and Malayan Saturnidae as *Attacus edwardsi, Actias selene, Caligula japonica, simla* and a new species of *Cricula.* Wanted live cocoons or ova Central American and Mexican *Attacus,* also *luna, colombia, calleta* and *shastaensis.* Old correspondents invited to write.—J. Henry Watson, 70 Ashford Road, Withington, Manchester, England.

Records of Hemiptera collected on Long Island desired (especially Homoptera, and will be received with much appreciation by C. E. Olsen, Jefferson Ave., Maspeth, L. I.

Wanted connections with reliable entomologists in California, Arizona and Florida for the intercourse of mutual assistance in experimental work with Heterocera and Rhopalocera.—Carlo Zeimet, 170 William Street, New York, P. O. Box 1613.

Cicindelidae for exchange. All are first class, fresh, in papers. Also have others in my collection.—Adolph Maresh, 2517 S. Homan Avenue, Chicago, Ill.

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The Robber-flies of America, North of Mexico, belonging to the Subfamilies Leptogastrinae and Dasypogoninae, by E. A. Bach, 264 pp., 11 plates $3.00

Catalogue of the Nearctic Hemiptera-Heteroptera, by Nathan Banks. 116 pp. 1.00

Descriptions of new N. American Hemiptera, by E. P. Van Duzee. 16 pp. .15

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33*a*	8	2055	2	3673	3	5670	3	6734	2	7312	3	7493	2
35	3	2060	2	3864	2	5684	3	6742	3	7329	5	7586	5
41*c*	3	9601	3	3924	2	10,224	10	6893	2	7330	10	10,647	10
52	5	2145	3	3980	10	10,274	1.25	6991	3	7337	8	7605	10
63*a*	15	2258	2	4260	8	5859	5	7003	2	7338	5	7608	3
103	1.00	2260	3	4526	8	5865	3	7063	5	7343	2	10,691	5
133	15	2263	5	4529	8	5869	2	7126	10	7374	3	7699	15
139	15	2641	5	4628	2	5920	15	7168	5	7375	3	7871	8
143	25	3103	10	4654	10	6151	8	7171	8	7376	10	7995	5
241	3	3155	3	4689	8	6159	1.00	7174	10	7380	10	8025	5
517	2	3445	2	4690	8	6178	8	7181	3	7382	2	8076	2
562	5	3456	5	4691	8	6318	8	7182	3	7385	3	8128	5
782	2	3457	5	4817	2	6326	5	7185	3	7387	3	8161	8
809	2	3459	5	4846	5	6368	15	7191	3	7397	5	8240	3
810	3	3561	5	4850	5	6574	2	7223	2	7431	2	8322	3
842	3	3576	2	4946	3	6584	8	7238	15	7433	5	8702	3
852	5	3583	2	4997	5	6599	5	7241	25	7436	5	10,090	8
860	5	3608	3	5048	5	6618	5	7248	3	7437	3	11,153	2
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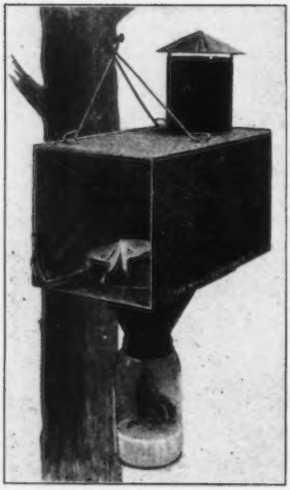

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